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Teaching Experiences of Elementary School Teachers: An Analysis in the Post-COVID Era

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A thesis submitted in partial fulfillment of the requirements for the Master of Arts degree in Education
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Abstract

The research provides a deeper understanding of the varied in-person teaching experiences of elementary school teachers in the post-COVID Era. Under this main objective, it explored the teaching styles, views, and attitude of elementary school teachers towards teaching post-COVID-19. It also explores the technological transformation undergone by the teachers and the most preferred teaching modes (face-to-face, online, and blended) used by elementary school teachers in India after returning to the classroom, post-COVID-19. A mixed-method research approach was used to answer the research questions. The technological pedagogical content knowledge (TPACK) framework and Bandura self-efficacy theory were used as conceptual frameworks in the research. The TPACK framework emphasizes the development of pedagogical practices in educators with the use of technological tools and Bandura's self-efficacy theory helps to study the teaching preparation and experiences of elementary school teachers after COVID-19. Research findings revealed that the majority of elementary school teachers have adopted varied teaching styles, and have an overall positive view and attitude towards teaching in the post-pandemic world. Furthermore, there was no statistically significant difference in the overall teaching style, views, and attitude of elementary school teachers in terms of demographic data such as age, gender, educational qualifications, work experience, and experience with ICT. Hence, gender as a variable does not affect the teaching style of elementary school teachers in the post-COVID Era. As well, it was revealed that half of the teachers prefer a blended mode of teaching, and remaining teachers preferred face-to-face teaching post-pandemic. Lastly, the teachers expressed that they attended various professional development training to

improve their knowledge of technology, provided to them by their institution and the government of India. The overall teaching experience of elementary teachers post-COVID-19 is positive, but they are experiencing a few challenges such as increased workload and stress. This research provides insight into real-time teaching experiences of elementary teachers after the pandemic.

Keywords: Post COVID-19, teacher experiences, digital technology, teaching modes, views and attitude towards teaching, teaching style, technological enhancement.

Summary for Lay Audience

The current research is aimed at examining the teaching experiences of elementary school teachers in the post-COVID Era in the Indian context. The literature revealed that there is a need to examine elementary teachers' views, beliefs, teaching approaches, technological enhancements, and preferred modes of teaching after COVID-19. Thus, the study examined the changes in teaching style and strategies, views and attitudes toward in-person teaching, modes of teaching preferred, and the technological improvements made by elementary school teachers in the post-COVID world. The technological pedagogical content knowledge (TPACK) framework and Bandura's self-efficacy theory were used for the conceptual framework in this study and both quantitative and qualitative data were collected and analyzed to achieve the objective of the study.

The results of the study revealed that the majority of elementary school teachers have adopted varied teaching styles, and have overall positive views, and attitude towards teaching in the post-COVID Era. Also, there is no statistically significant difference between male and female elementary school teachers in terms of teaching style, views, and attitude. Hence, gender as a variable does not affect the teaching style of elementary school teachers in the post-COVID Era. After returning to the classroom most of the teachers have increased the use of technology for teaching, lesson planning, assignments, and administrative work, and have also increased the use of various digital resources to engage learners interactively. The overall teaching experience of elementary teachers post-COVID-19 is good, but they are experiencing a few challenges such as increased workload and stress. Lastly, they mentioned that they have updated their knowledge and

skills by attending the professional development program. The findings of the research highlight the development of new teaching practices, changes in modes of teaching-learning, and the chance to assess and improve teacher education after a pandemic. It also adds to the limited knowledge about the teaching experiences of elementary school teachers in the post-COVID Era in the Indian context. It is recommended that teachers should incorporate technology effectively and carefully into their classrooms. Finally, it is advised that policymakers and school administrators investigate the challenges that teachers are encountering while teaching in the post-COVID-19 Era.

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List of Abbreviations

TPCK or TPACK	Technological Pedagogical Content Knowledge
TCK	Technological Content Knowledge
TPK	Technological Pedagogical Knowledge
PCK	Pedagogical Content Knowledge
TK	Technological Knowledge
CK	Content Knowledge
PK	Pedagogical Knowledge
ICT	Information and Communications Technology
CAI	Computer-Assisted Instruction
MOOCs	Massive Open Online Courses
VLE	Virtual Learning Environments
Delhi NCR	National Capital Region
NMREB	Non-Medical Research Ethics Board

Chapter 1: Introduction

The COVID-19 pandemic has caused and continues to cause severe societal distress, cultural instability, economic distress, and disruption in the education sector (Crick et al., 2020). Since the pandemic outbreak has had such an adverse effect on the education system globally, governments have been forced to assess, study, and alter policies related to the education sector. Due to these changes in policies and practices, the paradigm of education has changed from direct (offline) learning to virtual learning "through synchronous and asynchronous learning" to ensure the long-term viability of the educational process during a pandemic (El Rizaq & Sarmini, 2021, p. 172). When education institutions moved to online learning, it impacted teachers' and students' teaching-learning performance positively and negatively (DeCoito & Estaiteyeh, 2022a,b,c). Therefore, education has adopted and implemented numerous learning modalities (digital, hybrid learning, or experiential learning) and technological tools (WhatsApp, Zoom, webcasting, or Google Classrooms) to overcome effects of the pandemic (Korkmaz & Toraman, 2020).

During the COVID-19 pandemic, teachers themselves became learners and acquired new knowledge and skills to adapt to the new teaching-learning environment. Different learning techniques were designed to assist instructors to fulfill their responsibilities as educators and remain productive and effective in the classroom (Supena et al., 2020). The COVID-19 pandemic has provided educators with an opportunity to leverage their professional competence and collaborate with resourcefulness and creativity, while concurrently challenged by the shift in learning from face-to-face classes to online learning formats (Saboowala & Manghirmalani

Mishra, 2021). Due to this shift in education, teachers had to undergo overnight digital transformation to overcome technology phobia; this led to the development of technology-enhanced practices in teachers during the COVID period.

According to Andarwulan, Fajri, and Damayanti (2021), "The education system designed to cope with the COVID-19 Era is marked by the new normal" (p. 772). After the COVID-19 pandemic, as teachers returned to the classroom, many schools introduced alternate teaching practices in response to the pandemic, such as socially distanced classrooms, hybrid teaching, or 100 percent virtual learning (Rogayan Jr. & Dantic, 2021). These factors "facilitated the effective adoption of online teaching and learning models in elementary and secondary schools" (Song et al., 2020, p. 754). As a result, teachers were challenged with changing instructional needs, work expectations, and classroom conditions (DeCoito & Estaiteyeh, 2022a, b, c; Pressley, 2021). All these challenges have changed the teaching experiences of teachers as they learned and expanded their knowledge, skills, and strategies in various facets of education as they returned to the classroom (Crick et al., 2020). Due to these changes in the teaching and learning process, teachers not only adapted to the new teaching practices, teaching methods, and the work-pressure post-COVID but also engaged in training, workshop, and courses to update their technological skills, knowledge, and resources (Dindar et al., 2021).

Educators play a very significant and influential role in teaching students in elementary schools. Elementary teachers must develop lesson plans that are interactive and designed as per the characteristics or needs of children (student-centered) to achieve the learning objective and to engage students in the classroom (Goodman, Barker, &

Cooke, 2018; Sahin, Harun, Muhammed, 2020, as cited in Supena et al., 2020). The "elementary school learners need hands-on activities, individualized and small-group scaffolding, and cooperative learning into lessons" to engage in learning (Pressley, 2021, p. 1612). Because of this intricate and multifaceted character of elementary schooling, the transition in teaching-learning after COVID-19 proved to be extremely challenging (engaging the learners, forming relationships, and well-being) for the teachers (Timmons et al., 2021). As a result, they upgraded the instructional approaches, evaluation techniques, learning objectives, and curriculum as they returned to normal schooling (Tobin et al., 2021). It is, therefore, essential to study and analyze the diverse in-person teaching experiences (including teaching style and strategies, views and attitude toward in-person teaching, modes of teaching, and self-efficacy as it relates to technological knowledge and skills) of elementary school teachers in the Indian context in the post-pandemic world. The theoretical framework of this research is constructed within the lens of technological pedagogical content knowledge (TPACK) framework as it "is related to both (a) teachers' perspectives and knowledge, and (b) teachers' actions and their observable effects" (Koehler & Mishra, 2009, as cited in DeCoito & Estaiteyeh, 2022b, p. 5).

1.1 Scope, Context, and Purpose

The COVID-19 pandemic has had and continues to have a significant impact on educational sustainability and has led to a greater reliance on technology-based education (Mulenga & Marban, 2020, as cited in Ata et al., 2021). Education seems to be entering a new era that is essentially driven by technology in a literal sense and in this era, educators have an opportunity to rethink education's goals post-pandemic. But based on my

experience as an educator, I observed that because of this new normal, educators have been compelled to adapt to the new changes, which in turn has altered their teaching experiences (Cahapay, 2020; DeCoito & Estaiteyeh, 2022a, b, c). After conducting a systematic literature review, I found that there is little to no research on factors affecting the in-person teaching experiences of elementary school teachers in the post-COVID period in India. Therefore, to address this research gap, I have adopted a mixed-method approach to highlight teacher preparation and best practices and add to the limited knowledge about the teaching experiences of Indian elementary school teachers in the post-COVID Era.

The context of this study is based on my understanding that teachers play an essential role in the education system. During the COVID-19 pandemic, teachers updated their varied teaching approaches by engaging children with new and skillful programs (graphic tools like Dyscalculia, modeling) that met their learning needs and kept them engaged during online lessons (Soni, 2020). Secondly, India is my homeland and during the COVID-19 pandemic I was an educator in an Indian school, so I was intimately aware of the struggle, challenges, and changes in the teaching methods, curriculum, increased use of technological tools, availability of resources and teaching modes. Therefore, in this "new normal" teachers' views should also be considered and recognized while framing the curriculum and policies for children. The government, school administration, and policymakers should consider and prioritize teachers' perspectives, attitude, behavioral changes, and their professional development.

Thus, the intent of this exploratory research is to provide a deeper understanding of the varied in-person teaching experiences of elementary school teachers in the post-

COVID world in India. Under this main objective, I identify the key disparities between male, female, or other gender identity elementary school teachers in terms of their teaching styles, attitude towards teaching, and ways in which they implement lessons post-COVID. I also gain insight into the technological transformation undergone by the teachers and the most preferred and utilized teaching methods or modes (face-to-face, online, and blended) used by the elementary school teachers in India after returning to the physical classroom.

1.2 Statement of Problem

The study explores primary issues related to in-person teaching experiences of elementary school teachers in the post-pandemic in India. A number of key concerns have been examined under this main objective including changes in teaching modes, the teaching style of male, female, or other gender identity elementary school teachers, their attitude toward teaching, and the technological improvements made by Indian teachers in the wake of the pandemic. The findings of the study may reveal the future of our education system as COVID-19 highlighted several changes in educators and modified the education sector according to the need of time. Hence, my research provides an in-depth analysis of the teaching experiences of elementary school teachers in the Indian context in the post-pandemic era.

1.3 Researcher Positionality

I believe that teaching and learning is an ongoing process as it keeps on changing and improving according to circumstances. Teachers are a very important part of the teaching-learning process as they are in direct contact with children, they are

implementors of the curriculum to achieve desired outcomes in the real-time classroom (Mishra et al., 2020). They bring modifications in education according to the needs of children to make learning simpler and more interactive (Dhawan, 2020). As they modified the ways of teaching and learning during the pandemic, they developed new lesson plans, and changed the mode of teaching from face-to-face to online teaching (Saboowala & Manghirmalani Mishra, 2021). Nikolopoulou (2022) found that "the majority of teachers utilized a combination of teaching practices-approaches (constructivist, traditional, behavioral, as well as experiential learning approaches) during online education, and that the learning activities used were mostly linguistics, psychomotor activities, video displays, mathematics, and interdisciplinary activities" (p. 9).

I am a teacher, and from my experience as a teacher, I have noticed that the COVID-19 pandemic brought numerous challenges in teaching in India (Saboowala & Manghirmalani Mishra, 2021). It has compelled teachers to update their computer skills overnight, develop technology-enhanced practices, redefine teaching approaches, and use digital tools for interaction (communication) and assessment; all these changes have led to behavioral changes, stress, and anxiety in educators (DeCoito & Estaiteyeh, 2022a, b, c). As a result, it has led to changes in pedagogy, curriculum, and technological transformation of teachers post-COVID (Nikolopoulou, 2022). Thus, based on my position as a researcher, I chose to conduct an in-depth analysis of the varied teaching experiences of elementary school educators in the post-pandemic era. I decided to address the changes in the teaching style, views, and attitude of elementary school teachers. Additionally, I explored the different modes of teaching preferred by the

elementary school teachers and the ways in which they improved their knowledge of digital technology in India. Moreover, I provide a clear picture of the situation of elementary educators in India and how they are dealing with innovations related to teaching and learning in the classroom in this new normal.

1.4 Objective

The study's main objective of the study is to explore the in-person teaching experiences of elementary school teachers in the post-COVID Era in India.

To gain a complete understanding of the objective, I will examine the teaching styles, views, and attitude of elementary school teachers towards teaching post-COVID-19. Further, will also explore the technological transformation undergone by the teachers and the most preferred teaching mode (face-to-face, online, and blended) used by elementary school teachers in India after returning to the classroom, post-COVID.

1.5 Research Questions

In addition to the main objective, the following research questions assisted in achieving the stated research objective. They are as follows:

1. If and how has gender as a variable affected the teaching style of elementary school teachers in the post-COVID Era?

2. What are elementary school teachers' views of and attitude toward in-person teaching in the post-COVID Era?

3. Which type of teaching model (face-to-face, online, and blended) do elementary teachers prefer after returning to the in-person classroom? Why is this a preferred model?

4. What did elementary school teachers do to improve their knowledge of digital

   technology in the past two years, as it relates to teaching and learning?

1.6 Relevance of the Research

After exploring the different teaching styles of elementary teachers, their views, and attitude towards teaching in the post-COVID scenario my research will facilitate the development of new teaching strategies that have emerged after COVID-19 in order to enhance the teaching-learning process. Moreover, this study calls for empowering teachers and revolutionizing their practices to ensure equitable and high-quality education for all students (DeCoito & Estaiteyeh, 2022b). The study also provide an opportunity for assessing and improving teacher education programs post-pandemic. My study hypothesizes that the teachers have enhanced their technological knowledge in the past two years and have also adopted new modes of teaching (face-to-face, virtual, and hybrid) after returning to the classroom. Therefore, the findings of this study will highlight various ways of using technology in the real-time classroom and will also indicate several approaches for providing technology-based instruction to engage learners post-COVID-19 (Charania et al., 2021). The research provide insights into the current state of online, blended, and offline teaching modes and will also help in developing a policy roadmap for the effective use of these models in the future (COVID and post-COVID scenarios).

This study is important for providing a terrain of teachers' difficulties, achievements, gaps, and constraints in the post-COVID Era (DeCoito & Estaiteyeh, 2022b). It will also inform government, policymakers, and school administrators about the successes and challenges associated with teaching post-COVID-19. This study is

significant because after conducting a literature review related to the topic, I found a lack of research that have been conducted in India. Hence, this research will contribute to filling the knowledge gap in the context of post-pandemic teaching experiences of elementary school teachers in India.

1.7 Conceptual Framework

This research is conceptualized as part of the TPACK framework, or teacher knowledge of technology integration (originally called TPCK, now referred to as TPACK) (Koehler & Mishra, 2009) (See Figure 1)

Figure 1

TPACK Framework and its Components (adapted from Koehler & Mishra, 2009, p. 63)
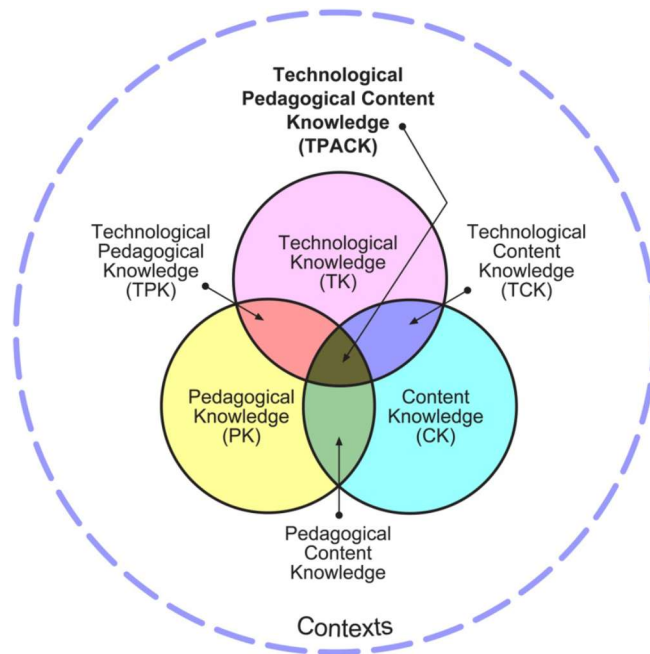
The TPACK framework expands on Shulman's (1987, 1986) attempt to describe the distinctive professional learning of educators. He theorized that pedagogical content knowledge (PCK) was created through "the intersection of pedagogical knowledge (PK) and content knowledge (CK)" (Koh et al., 2014, p. 20). He described how teachers' knowledge of educational technologies and PCK are interconnected to ensure effective technology-based teaching (Koehler & Mishra, 2009). The three fundamental domains of teacher knowledge (TK, PK, and CK) are represented by a circle and the intersection of these circles is known as TPACK. This intersection led to the development of seven constructs (TK, CK, PK, TCK, TPK, PCK, and TPACK) that make up the TPACK framework developed by Mishra and Koehler (Lyublinskaya & Kaplon-Schilis, 2022; Sarı & Keser, 2021). Further, the TPACK model was developed by Mishra and Koehler in 2006 by incorporating TK (technological knowledge) into "Shulman's (1987) PCK theory", which comprises PK (pedagogical knowledge) and CK (content knowledge) as shown in Figure 1 (Ata et al., 2021; Sarı & Keser, 2021, p. 252). Ata et al. (2021) stated that one of the most effective models for integrating technology into education is the TPACK model.

Technological knowledge (TK) includes software and technological tools that are relevant to the specific field of study and the instructors' fields of expertise. Pedagogical knowledge (PK) refers to the knowledge and understanding of the educators about the procedures, techniques, and approaches used in teaching-learning (Ata et al., 2021, p. 195). "Content knowledge (CK) consists of teachers' knowledge about the subject matter," including the concept and idea related to it. Technological content knowledge (TCK) includes knowledge on how to deliver more affluent, more adaptable course

content using the best suitable technology to teach (Sarı & Keser, 2021, p. 253). Pedagogical content knowledge (PCK) includes determining the best approach to teach subject matter in order to translate educational content into explanations that students can grasp. Technological pedagogical knowledge (TPK) refers to the understanding of the educators required to facilitate teaching-learning when specific tools are utilized in specific ways (Koehler & Mishra, 2009, p. 64-65). Lastly, TPACK can be defined as the educators' knowledge to teach course content by using different technologies and continually improving this process to reinforce previous practices and engage learners in the classroom (Koh et al., 2014, p. 21).

Many teachers found it difficult to employ technology to promote meaningful learning during the COVID period, as seen by the sparse usage of technologies while teaching in classrooms (Dindar et al., 2021). Therefore, governments worldwide have made it a priority to increase the capabilities and knowledge of educators so that they can effectively use technology within the classroom in the COVID and post-COVID contexts. Hence, teachers could use TPACK as a conceptual framework to visualize how technology can be integrated into classrooms alongside educational practices (Mishra & Koehler, 2006, as cited in Dindar et al., 2021). This framework outlines the knowledge instructors need to effectively use information and communications technology (ICT) while instructing pupils with various interests and skills (Heitink et al., 2017, as cited in Sarı & Keser, 2021). DeCoito and Estaiteyeh (2022b) stated that technologies could be skillfully incorporated by teachers to improve learning outcomes by leveraging their ability to assist and promote learning. At the same time, teachers must be conscious of the dependency between technology and subject-matter expertise.

In addition to the TPACK framework, self-efficacy theory will comprise the conceptual framework for this research. The idea of self-efficacy was first proposed by Bandura in 1977, but later, he used it as the central idea of his theory of social cognition (Bandura, 2001, as cited in Yada & Savolainen, 2017). Bandura (1994) defines self-efficacy as "the confidence (belief) of an individual in his capabilities to plan, arrange and carry out specific kinds of performance and activities to generate specific attainments" (p. 73). Teacher self-efficacy is described as a "personal belief in their own ability" to design, plan and execute educational objectives to teach efficiently and achieve learning outcomes (Gavora, 2010, p. 18, as cited in Joo et al., 2018, p. 49). According to Rimm-Kaufman and Sawyer (2004), teacher self-efficacy is connected to both the "learning and motivation" of their students as well as their "classroom behaviours and performance" (as cited in Bedel, 2016, p. 143). Self-efficacy, in particular, serves as the most potent element influencing teachers' behaviour and practice (Henson, 2001; Tschannen-Moran & Hoy, 2001). Henson (2001) revealed that teachers with higher levels of self-efficacy were more inclined to employ advanced teaching strategies that were closely connected to their student's learning (as cited in Joo et al., 2018). Additionally, highly self-efficacious educators are much more receptive to new perspectives, dedicated to their profession, and eager to implement practical pedagogical approaches (Tschannen-Moran & Hoy, 2001, as cited in Bedel, 2016). The study by Joo et al. (2018) highlights the importance of "TPACK and teacher self-efficacy" as key formative components in boosting technology usage intention in educational practices (p. 49).

Thus, the TPACK model and self-efficacy theory serve as the foundation for my research. Joo et al. (2018) noted that the TPACK framework had become an area of specialization for educators in this new normal post-COVID-19. It will provide insight into whether elementary school educators have enhanced their teaching techniques in the post-COVID Era by incorporating technology into pedagogical practices (i.e., integration of technology, pedagogy, and content). Moreover, self-efficacy theory will assist in exploring whether elementary school teachers are confident about their teaching approaches post-COVID-19, whether they have incorporated technology into their teaching practices to engage students effectively in learning, and highlighting their perspectives towards in-person teaching post-pandemic.

Chapter 2: Theoretical Overview and The Literature

In this chapter, I have organized my literature review into four sections related to the research questions of the study. The first part consists of research papers related to the teaching style of elementary school teachers in the post-COVID Era. The second section describes the views and attitude of elementary teachers towards teaching in the post-COVID Era. The third section discusses technological enhancement undergone by elementary teachers during the pandemic period and, lastly, the teaching model preferred by teachers in the post-pandemic world is covered in the fourth Section.

2.1 The Teaching Style of Elementary School Teachers in the Post-COVID Era

Educators and education systems across the globe adapted and innovated in response to the arrival of the COVID-19 pandemic and the consequent closing of schools. Educators responded proactively not only to the modifications in lesson delivery but also showed significant support in continuing the education uninterrupted (Zhao & Watterston, 2021). This gave educators and students the opportunity to collaborate and rethink the type of education they actually require rather than clinging to an outdated and rigid model (Zhu & Liu, 2020). Educators developed, acquired, and utilized the knowledge, techniques, and traits necessary to support teaching-learning using technology effectively and creatively (Aivazidi & Michalakelis, 2021). On the other hand, there were educators who did not embrace technology as they faced numerous challenges that included new approaches to planning and instruction, new technology platforms, and a lack of proper infrastructure (Pressley, 2021).

The teaching style of a teacher can be described as a medium or approach in which they interact with the students, convey information, coordinate activities, monitor

the workflow, and introduce students to the discipline (Grasha, 2002, as cited in Berko, 2015). It can be of two types: personality-based teaching style, which is based on the personality traits of a teacher, and it can be an achievement-based approach where the teacher tries to accomplish desired learning outcomes (Hurriyetoglu & Kilicoglu, 2020). "Learning and teaching styles play a significant role" in fostering quality education and boosting motivation among children (Guven, Polat, Yıldızer, Sonmez & Yetim, 2016; Veznedaroglu, 2005, as cited in Hurriyetoglu & Kilicoglu, 2020, p. 224). There are several other factors that influence a teacher's teaching style, including educational qualification, skills, and the number of years they taught in the classroom (experience) because as teachers gain more experience over the years, they keep on enhancing their teaching practices (Vikas & Mathur, 2022). Aivazidi and Michalakelis (2021) stated that the teaching style of every teacher might not be compatible with digital technology in their classrooms post-COVID-19. Another study conducted by Lizana et al. (2021) concluded that elementary teachers need to structure their lessons in this new normal so that they are actually providing direct assistance to their pupils through demonstrating, mimicking, group activities, collaborative work, and other means. They should provide teaching that is inquiry-based, discovery-based, and play-based to engage learners in the classroom post-COVID-19 (Hurriyetoglu & Kilicoglu, 2020). Further, Öznacar et al. (2017) found that gender as a variable did not impact teachers' teaching styles. The only difference was in their personal model in the sense that every teacher has a separate style of teaching and also, there is no significant difference between the teaching style of teachers and their educational background or marital status.

Few teachers have changed their teaching style upon returning to the school as they prefer to use technologies that enable student engagement and constructivist learning and enhance their existing teaching styles (Hurriyetoglu & Kilicoglu, 2020). In my opinion, the development of a high-quality educational environment depends on the interactions between the teacher and the students as well as the teacher's teaching style. A teacher's teaching style is an important factor in the planning, organizing, and growth of education in this new normal (Vikas & Mathur, 2022).

2.2 The Views and Attitude of Elementary Teachers towards in-person Teaching in the Post-COVID Era

2.2.1 The attitude of teachers towards teaching in the post-COVID Era

Another important factor impacting teaching during the pandemic and post-pandemic is the attitude of teachers towards their profession, which has a direct effect not only on their students but also on their teaching practice. As per Allport (1954), attitude can be described as a complicated "mental and neutral state", including beliefs and emotions that influence how individuals respond to matters and situations (as cited in Maheshwari, 2016, p. 601). A positive attitude of teachers would contribute to the creation of an encouraging and enlightening environment for teachers as well as students, whereas the negative attitude of teachers would make the task of teaching challenging, and consequently, learning would become monotonous for the students (Maheshwari, 2016).

The study conducted by Shakoor and Farrukh (2018) investigated the attitude of pre-service and in-service (male and female) instructors toward teaching in elementary

schools and explored the root causes of a specific type of attitude among teachers. The research concluded that the majority of male elementary school teachers have less favorable attitudes towards the profession whereas there were almost zero female teachers who have less favorable attitudes towards the teaching profession. Furthermore, only a few teachers have a positive attitude toward teaching. The negative attitude towards the profession is attributed to numerous factors, including the "low social status of the teachers, low salaries, lack of incentives and rewards, and the attitude of DEOs (District Education Officers) and directors" (Shakoor & Farrukh, 2018, p. 237). On the contrary, few studies such as Jain et al. (2020) and Maheshwari (2016) reveal that most teachers are positive and self-motivated, in addition to taking responsibility for their professional development.

2.2.2 Perspectives of teachers towards teaching in the post-COVID Era

The COVID-19 pandemic has psychologically impacted teachers because of the increased workload and instructional challenges and has led to behavioral changes, stress, anxiety, and burnout in teachers and also affected their teaching practices (DeCoito & Estaiteyeh, 2022a, b, c; Pressley, 2021; Supena et al., 2020). The educational system is evolving in this new normal, and teachers' roles and work format are also changing which has led to changes in teachers' views and attitude toward teaching (Amram & Davidovitch, 2021). According to a prior study on teachers' attitudes regarding electronic-teaching in COVID-19 by Amram and Davidovitch (2021), female teachers had a more positive attitude toward virtual teaching than male teachers. Giovannella, Marcello, and Donatella (2020) also revealed that teachers had positive views about teaching with technology as they could teach in their comfort zone. On the flip side, the

research of Karalar and Sidekli (2021) revealed that there was no significant variation in attitude toward e-learning among elementary school educators in terms of gender. Additionally, teachers in primary schools had negative views about online teaching and learning (Razkane et al., 2022). Furthermore, Saboowala and Manghirmalani Mishra (2021) stated that in the post-pandemic scenario, when the teachers returned to the schools, the female educators expressed that they experienced more workload and stress in teaching as they had to manage home chores and work at the same time. COVID and post-COVID timeframes showed substantial gender disparities between men and women, with women experiencing a greater impact on their mental and physical health due to work-related stress (Lizana et al., 2021). There are many female teachers who are caregivers of their families and are working at the same time, which is stressful situation for females during the COVID pandemic. Not just the female teachers but other teachers as well expressed that they had burnout, stress, and anxiety during the COVID due to workload (Saboowala & Manghirmalani Mishra, 2021). Additionally, Korkmaz and Toraman (2020) noted that as teachers resumed school post-COVID, some of them experience a psychological breakdown. Therefore, educators should be given the appropriate direction and assistance to help them reintegrate into the educational system, as well as motivation to have a positive outlook on teaching after the pandemic.

2.3 The Teaching Model Preferred by Teachers in the Post-Pandemic World

Digital technology has developed and transformed rapidly in the twenty-first century, but this growth has been ramped up by the lockdown mandated due to the pandemic outbreak (Ata et al., 2021). The adaptable usage of digital technology has transformed the practices of educational institutions, educators, and learners (Korkmaz &

Toraman, 2020). The COVID-19 crisis led to a transition from traditional face-to-face instruction to indirect approaches (such as virtual classes, and blended models) of teaching-learning and has compelled schools and teachers to use a learning process that has both difficulties and limitations (Aliyyah et al., 2020). The major problems faced by teachers were lack of adequate infrastructure, low internet connectivity (especially for the teachers living in remote areas), expensive data packages, limited experience with online techniques, and lack of institutional support (Aliyyah et al., 2020; Nikolopoulou, 2022). Furthermore, the study conducted by Song et al. (2020) indicated that "teachers needed the most support in four areas - general IT literacy, online teaching skill development, online teaching resources, and home-school collaboration" in order to adopt online teaching (p.753).

New terminology has been introduced in the literature since digital technology has been widely used in various educational contexts. For example, online learning, blended learning, e-learning, web-based learning, computer-assisted instruction (CAI), massive open online courses (MOOCs), virtual learning environments (VLE) and so on (Daniel, 2014; Moore & Kearsley, 2004; Urdan & Weggen, 2000, as cited in Korkmaz & Toraman, 2020). Moreover, the COVID-19 global outbreak is redefining teaching approaches (online, blended, and offline learning) to instructional implementation (Cahapay, 2020). The term "online learning can be defined as an educational experience that takes place in a synchronous or asynchronous setting while using a range of Internet-connected devices" (such as computers and cell phones) (Singh & Thurman, 2019, as cited in Zhu & Liu, 2020, p. 697). Furthermore, blended learning can be simply defined as an instructional strategy that combines conventional classroom approaches and online

technological methods (Graham, 2013, as cited in Cahapay & Anoba, 2020). Lastly, offline learning or a face-to-face learning environment can be described as a teaching strategy in which course material and other learning resources are offered in person (Pirronea et al., 2021).

In the aftermath of COVID-19, using these teaching and learning modalities securely and critically appears to be more crucial than ever (Ata et al., 2021). There has been a fundamental change in the education sector post-COVID-19 due to which teaching practices are reshaping and the teachers have updated their skills and knowledge. Therefore, it is necessary to provide teachers with more support in implementing web-based learning practices and to integrate virtual/ distance learning courses into the classroom curriculum (Korkmaz & Toraman, 2020). Moreover, blended learning is coincidentally known as the "new normal" in the realm of educational technology (Norberg et al., 2011, as cited in Cahapay & Anoba, 2020). According to Saha et al. (2022), university teachers recommended mixed methods as the best teaching method after the pandemic, as they faced various challenges while teaching online. Some other research revealed that the majority of the teachers indicated that they would like to use a blended learning format over online learning for future educational activities (Amram & Davidovitch, 2021; Atwa et al., 2022; Bordoloi et al., 2021). Because online learning increases the work pressure and stress to boost the learning standards, it fails to follow certain educational principles (El Rizaq & Sarmini, 2021). Aliyyah et al. (2020) stated that virtual learning also placed several challenges and obstacles in front of teachers related to technical problems, lack of technical equipment, and poor internet connectivity. Whereas blended learning addresses the challenges posed by pandemic conditions and

technological advancements, it also facilitates direct engagement between student and teacher, and it still has the educational value that can be utilized as a benchmark for future schooling (Xiao, 2021). Therefore, "blended learning could be the solution for providing education" in the post-pandemic environment as it is helpful for the students and the educators (Bordoloi et al., 2021, p. 41).

2.4 Technological Enhancement Endured by Teachers during the Pandemic Period

Learning is an ongoing process since knowledge does not remain constant over time. For this reason, it is necessary to enhance teaching practices over time and move beyond traditional foundations of teaching-learning (Boudersa, 2016). Considering that teachers are regarded as the backbone of education systems, they should develop their teaching skills and professional knowledge through internships and professional development initiatives since they are highly valued and appreciated within education systems (Nghia & Tai, 2017). COVID-19 required educators to enhance their skills to incorporate ICT tools into their lessons and develop digital competencies to carry on the teaching-learning process (Ata et al., 2021). Many teachers found it challenging and complex to incorporate technology into their classrooms due to a lack of digital literacy (Dindar et al., 2021). Therefore, the teachers engaged with required training and workshops and tried to upgrade their skills, knowledge, and resources according to students' needs. This training helped educators acquire useful techniques and resources and promote effective teaching-learning in the classroom (Pozo-Rico et al., 2020). The school administrators organized online professional development training, courses, and workshops to familiarize teachers with digital tools, enhance their technical knowledge and promote professional growth (Shagiakhmetova et al., 2022).

Amid the pandemic, many teacher educators developed a professional program for educators and effectively altered the curricula (for example, by offering simulated teaching experiences using digital platforms) to facilitate online learning for pre-service teachers (Hartshorne et al., 2020). The teachers were provided with the necessary equipment and facilities, diverse toolkit, and infrastructure at home to continue teaching and learning in a pandemic context. Moreover, the teachers and students both were being provided with technological tools like computers, laptops, the internet, etc. as there were many initiatives implemented by the government and schools of India to boost the education system with the help of technology. Some of them are campus connectivity, smart classes, virtual labs, and National Digital Library (Jayaswal, 2019). The majority of the teachers stated that they also received and attended professional development training over the previous two years (Amram & Davidovitch, 2021). Pozo-Rico et al. (2020) examined the effects of teacher training programs to support primary school teachers in the COVID period and discovered that the teachers benefited from the training programs and by having lower stress levels, greater emotional stability, and improved teaching skills. Furthermore, Kim (2020) revealed that the teacher education courses were redesigned to offer "student teachers opportunities to learn and teach online" during the pandemic (p. 145). But on the other hand, there were several teachers who stated that they did not receive proper training, infrastructure, and support from their institutions resulting in numerous challenges while teaching and learning (Suksawas & Yiemkuntitavorn, 2022). Although teachers have returned to schools, they still need workshops and training to modify their teaching skills and strategies as many teachers did not attend any professional development program so now after COVID-19 they can

attend in-person training sessions. Other than that they also need family support to get back to normal routine as it was before COVID, and institutional help is also needed to reform the curriculum and teaching practices post-COVID-19. The outdated rules for traditional educational environments do not provide appropriate skills and competencies for the digital learning environment. Therefore, "the training for digital competency should not only focus on basic technical knowledge but also provide more practical experiences to utilize digital devices as well as hands-on training to deal with online teaching and learning devices" (Choi et al., 2021, p. 13).

In education history, the post-COVID-19 period has been recognized as the biggest paradigm shift (Mbhiza, 2021). It has changed the teaching and learning experiences of students and teachers and has reshaped the skills, strategies, techniques, and curricula around the world. India is a developing country that has introduced many technology-related changes in the education system. India is also focusing on Sustainable Development Goals (SDG 4) which is "quality education and lifelong opportunities for all" and has also led to the formulation of new education policies (Mohanty & Dash, 2018, p. 2242). Therefore, my research was conducted in the Delhi NCR region of India to gain insight into the changes in the teaching experiences of elementary teachers post-COVID-19. During the literature review, I was unable to locate a study that focused especially on the teaching experiences of elementary school teacher's post-pandemic in the Indian context. Most of the studies that I found were either focused on higher education and secondary teachers' experiences in the post-COVID Era, or on the experiences of primary teachers during the COVID-19 pandemic. Therefore, a gap in

research literature was identified and this study was designed to study the changes in the teaching experiences of elementary teachers post-COVID-19.

I used a range of periodicals, research papers, reviews, publications, journals, eBooks, abstracts, educational dictionaries and surveys, and Web searches to gather data for this study. After going through the literature related to the topic, it was noted that there are no specific studies (lack of research) that has been conducted on Indian elementary school teachers' teaching methodology, their views and attitude towards teaching, their technological transformation, and the modes of teaching preferred by them after returning to the classroom post-COVID-19. Additionally, to the best of my knowledge, researchers have not looked at the significant variations in the teaching style of male, female, or other gender identity elementary educators, as well as the differences between their perspectives on and attitudes towards teaching in a post-COVID context in India. Some of these factors (variables) can be located, but in separate studies, thus no one has conducted research combining all these factors in one study. Thus, the purpose of the study is to add to the limited knowledge related to the teaching experiences of elementary school teachers post-COVID-19.

The majority of research has investigated the teaching style of teachers in the COVID period (Berko, 2015; Hurriyetoglu & Kilicoglu, 2020; Lizana et al., 2021; Vikas & Mathur, 2022). Other studies like Shakoor and Farrukh (2018) and Maheshwari (2016), studied the attitude of teachers towards teaching before the pandemic, whereas Amram and Davidovitch (2021) and Karalar and Sidekli (2021), examined teachers' attitudes regarding electronic teaching during the pandemic. Similarly, some other studies focused on the model of teaching (offline, online, and hybrid) preferred by university

teachers but none of the research has been organized around the post-COVID-19 experiences of elementary school educators in the Indian context. In person teaching experiences of elementary school teachers in the post-COVID Era need to be studied adequately; hence, the present study has been conducted to add to the limited knowledge present in the literature.

Chapter 3: Methodology

My research explores in-person teaching experiences (changes in teaching style and strategies, views and attitude toward in-person teaching, modes of teaching, and the technological integration and implementation) made by Indian elementary school teachers in the post-COVID Era. In this chapter, I include justifications for utilizing a mixed-method study design. This section provides details related to the participants and settings of the study and information about the instruments used for data collection, research procedures, and data analysis.

3.1 Research Design

My study uses an integrated mixed methods design as it utilizes both quantitative (questionnaire) and qualitative (interview) strands together for analysis and comparison, and for one strand of data collection and analysis to inform the other. According to Creswell and Creswell, (2018), a mixed-method design or study is a common methodology based on work done by researchers in fields related to education, management, sociology, evaluation, and health. This approach involves collecting qualitative and quantitative data simultaneously, analyzing them separately, and interpreting the results together to determine if they confirm or disconfirm each other (Creswell & Creswell, 2018). I have specifically opted for mixed methodology to answer the research questions of the study (Creswell & Creswell, 2018).

For my study 100 participants completed an online survey to assess the teaching style, views and attitude of elementary school teachers. Further, an interview was also conducted with 10 teachers to study the technological enhancements endured by participating elementary teachers and their perspectives on using various modes of

teaching (online, blended, and face-to-face) after COVID-19 in India. Thus, the tools or instruments employed in the research collected both quantitative (survey questionnaire) and qualitative (semi-structured interview with open-ended questions) data.

According to Doyle et al. (2009), mixed method research approach is one of the most common paradigms for research. In a mixed method study, the researcher gathers data, analyzes it, incorporates the results, and draws conclusions based on quantitative and qualitative methods. Dawadi et al. (2021), stated that the systematic investigation of phenomena through the gathering of numerical data and the use of statistical, or computational methods to analyze the numbered data is known as quantitative research. Moreover, the purpose of quantitative research is to test the hypothesis of the research by finding out how variables are related (Creswell & Creswell, 2018). According to Creswell and Creswell (2018), qualitative research is a method for discovering and comprehending the significance that individuals or participants attribute to a social challenge. In addition, it provides a thorough understanding of the topic under investigation (Dawadi et al., 2021). "In other words, quantitative data bring breadth to the study and qualitative data provides depth to it" (Dawadi et al., 2021, p. 27). Therefore, a mixed method design is the best approach for this study as it uses both qualitative and quantitative data to explore the in-person teaching experiences of elementary school teachers in the post-COVID Era.

The current research was divided into four distinct phases: Context and participants, obtaining ethical approval, gathering data, and analyzing the quantitative and qualitative data to address the research questions of the study. Each of these stages are described in the following sections.

3.2 Participants and Settings

      The study gathered data from 100 elementary educators teaching different pedagogies in different schools in the Delhi National Capital Region (NCR) region of India. Thereafter, a semi-structured interview was also conducted with ten teachers. Table 1 illustrates the demographic survey data collected from the participants in terms of their age, gender, teaching experience, highest educational qualifications, marital status, experience with ICT and hours spent on computer usage for teaching.

Table 1

Demographic Data of the Participants

Variables	Frequency *(n)*
Age:	
20- 25	15
26- 30	18
31- 40	37
40+	30
Gender:	
Male	16
Female	84
Marital Status:	
Single	23
Married	73
Divorced	1

Widowed	3
Education Qualification:	
Bachelor's Degree	37
Master's Degree	56
Doctorate	1
Others	6
Teaching Experience:	
1-5 years	39
6-10 years	24
11-15 years	16
16-20 years	14
More than 20 years	7
ICT Experience:	
1-2 years	37
3-5 years	36
6-10 years	15
More than 11 years	12
Daily computer usage for teaching:	
0-2 hours	69
3-5 hours	23
More than 5 hours	8

This research is carried out in Delhi NCR region of India. There are different types of school in Delhi NCR region that is public or government schools, aided schools (It is a private institution that receives funding from the Indian government), and private schools (Tooley & Dixon, 2007). There are four levels of education at the school level: pre-primary, primary, secondary, and senior secondary. The teachers and students in Delhi NCR schools are being provided with technological tools like computers, laptops, the internet, etc. as there are many initiatives that are been implemented by the government and schools of India to boost the education system with the help of technology. Some of them are "campus connectivity, smart classes, virtual labs, and National Digital Library" (Jayaswal, 2019). I decided to collect data from private schools because accessing government schools require additional layers of permissions. Remotely it was very difficult to contact and collect all these permissions from the schools. In contrast, it was relatively convenient to contact and obtain permission from private schools.

The following were the criteria for inclusion of participants in the study:

1) Teachers who are teaching from grades 1st to 8th.

2) The teachers who are teaching in private schools only.

3) Teachers should have some experience in technology-based instruction.

4) The participants (teachers) and the schools were selected through a random sampling method. That is, all the participants had an equal probability of being selected for the research.

3.3 Data Collection Instruments

The data for the online survey and interview were collected online using the instruments

mentioned below:

1. Instrument I: Demographic Questionnaire (Appendix A- Part 1)- This section of the

   questionnaire consists of 8 questions and is established by the researcher to collect

   personal information about the participants such as their age, name of school/

   institution, sex identity, teaching experience, highest educational qualifications,

   marital status, experience with ICT and hours spent on computer usage for teaching.

2. Instrument II: Likert Scale Survey Questionnaire (Appendix A- Part 2)- This section

   of the questionnaire consist of 5-point Likert Scale survey statements (consists of 24

   statements) established by the researcher. It consists of two sections: Section A)

   Teaching styles of elementary school teachers, and B) Elementary school teachers'

   views and attitudes towards in-person teaching. Both Appendix A- Part 1& 2 have 32

   questions in total. The Survey took approximately 15 minutes to complete.

   The 5-point Likert Scale survey statements consist of five responses ranging from 1

   to 5 (1=Strongly Agree (SA); 2=Agree (A); 3=Undecided (U); 4=Disagree (D);

   5=Strongly Disagree (SD). Some of the sample statements from both the sections

   have been mentioned below:

A) Teaching Style of elementary school teachers post-COVID-19

- *After the pandemic, I upload assignments and notes to a digital platform for students*

  to access.

- *I use digital resources (instructional software) for teaching after returning to the*

  classroom from a pandemic.

B) Views and attitude of elementary teachers towards teaching post-COVID-19.

- *I use technological tools (computers, laptops, and smartphones) for teaching during COVID-19.*

- *I have gained more knowledge of the incorporation of digital technology in teaching over the last two years.*

3. Instrument III: Open-Ended Questions (Appendix A- Part 3)- 11 questions were included in the semi-structured interview, which was conducted via Zoom or by telephone with 10 elementary teachers. The interview provides a deeper understanding of in-person teaching experiences (in terms of changes in teaching modes, views and attitude of teachers, new teaching strategies/ strategies, and technological transformation) of elementary school teachers in India in the post-COVID Era. The Interview took approximately 15 minutes to complete. Some of the sample interview questions have been mentioned below:

- *What new teaching strategies have you adopted after returning to the classroom post-pandemic?*

- *What changes do you feel are needed in the curriculum to continue teaching in the new normal?*

- *Which mode (face-to-face, online, and blended mode) of teaching do you prefer? Why do you consider it a good mode to teach?*

3.4 Ethical Approval

Participants are an important component of the research, and their rights needs to be protected therefore ethical approval must be obtained before data collection to accomplish the goal of the study. A research ethics application was submitted to the Non-

Medical Research Ethics Board (NMREB) of Western University in order to facilitate ethical approval. The introduction, purpose and significance, research questions, procedure of the research, privacy policy, responsibility, and accountability, rights of the participants all the essential elements related to the research were defined along with the supporting documents. To continue with the study, Western University NMREB's approval was requested based on guidelines of the TriCouncil Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2).

3.5 Procedure of the research

After receiving ethical approval from the university, the principals of the various private schools in Delhi NCR region of India were contacted through the information available on public portals such as Justdial. Further, the principals of schools were invited to participate in the research through an invitation email (Appendix B) with an attachment of recruitment email (Appendix C) to recruit potential participants. Moreover, a Letter of Information and consent form containing information outlining the research, i.e., the introduction, purpose and significance, and time commitment for participants were also sent to the principal with a request for potential participants to contact the researcher.

The recruitment email containing the survey link which directed participants to a Qualtrics platform was forwarded by the principals to the participants (20 elementary school teachers from each school) who met the inclusion criteria of the study. The Survey questionnaire (Appendix A, Part 1 & 2) with closed-ended questions (in total it has 32 questions) was completed by the participants.

At the end of the online survey, the participants were invited to participate in an optional semi-structured interview (Appendix F) and provide their contact information. Once the participants contacted me to participate in voluntary interviews they were provided with a new Letter of Information and Verbal Consent for the interview (Appendix G). The interview was conducted by contacting each potential participant (10 elementary school teachers i.e., 2 teachers from each school) individually on the telephone. The interview consisted of 11 questions and audio recording of the interviews was done using the voice recording app "Voice Memo". It took approximately 15 minutes to complete the interview with one participant.

Data for the online survey and the interview were collected from the participants between January 2023 to February 2023 (Appendix A). One week later a reminder email (Appendix E) was sent to the participants. The survey and the Interview took approximately 15 minutes to complete.

Once data collection was completed, the survey responses and interview transcripts were processed and analyzed using tools such as, SPSS software and NVivo 12 transcription software.

3.6 Data Analysis

Data analysis is the procedure or approach used to organize, structure, and interpret data (facts and figures) in order to address a research issue or discover the answers to a set of research questions (Cross & Plunkett, 2014). Creswell (2014) stated that data analysis in a mixed method study involves data integration from the two databases (qualitative and quantitative). Therefore, in my research, the data collected through the online survey (closed-ended questionnaire) represented quantitative data and

was used to examine the teaching style of elementary school teachers and their views and attitude towards teaching in the post-COVID world. On the other hand, a semi-structured interview (open-ended questions) developed by the researcher represented qualitative data and was used to investigate the technological enhancements endured by the teachers in India and their perspectives on using online, blended, and face-to-face teaching modes after COVID-19.

According to Creswell (2014), quantitative data analysis involves the collection, evaluation, and interpretation of quantitative data using statistical (descriptive and inferential) and computational (such as SPSS software) methods to generalize the findings of the research on the entire population. Descriptive statistics is used to present a dataset in categories or quantitative form, and inferential statistics uses the examined data obtained via descriptive statistics to generate predictions or to highlight potential outcomes (Ali, 2021). As per Nagaiah and Ayyanar (2016), SPSS is software that performs intricate statistical analyses on huge quantitative datasets, making work easy and quick.

The quantitative data collected from the Likert scale survey questionnaire was retrieved from the Qualtrics platform and transferred into Microsoft Excel. Further, the SPSS software was used to analyze the collected data using descriptive and inferential statistics. This study used descriptive statistics (such as mean, median, standard deviation, frequency distribution, and percentage) and inferential statistics (such as independent T-test, one-way ANOVA) to analyze the quantitative data collected in the study. Firstly, I calculated the frequencies (n) and percentage (%) of demographic data collected from the elementary school teachers including their age, sex identity, teaching

experience, highest educational qualifications, marital status, experience with ICT and hours spent on computer usage for teaching. Inferential statistics methods such as the T-test determined the affect of gender as a variable on the teaching style of male, female, or other elementary school teachers towards teaching in a post-COVID context. Participants' responses to the 24 statements exploring teaching style, views, and attitude of elementary school teachers were calculated for frequencies and percentages for each statement.

In order to calculate the overall teaching style, views, and attitude of elementary teachers, the participants' aggregate mean scores were calculated for each variable, and this mean score was compared to a conventional Likert scale range. Based on the conventional Likert scale range, the overall mean score was determined as follows: Strongly agree (Likert scale 1) in the range of 1.00 to 1.50, Agree (Likert scale 2) in the range of 1.51 to 2.50, Neutral (Likert scale 3) between 2.51 to 3.50, Disagree (Likert scale 4), between 3.51 to 4.50, and Strongly disagree (Likert scale 5), between 4.51 to 5.00 (Pimentel, 2010). The Likert scale responses "strongly agree" and "agree" were regarded as positive and "strongly disagree" and "disagree" were regarded as negative, and " neutral" was considered neutral when assessing the overall teaching style, views, and attitude of elementary school teachers.

According to Jackson and Bazeley (2019), the NVivo coding tool is one of the most preferred software for storing, maintaining, and analyzing qualitative data of a study. It is a qualitative analysis tool that makes it simple to organize and examine unstructured data. The qualitative data collected through audio-recorded interviews of teachers were converted into the desired file size, transcribed and uploaded into the

NVivo 12 transcription software to create themes that were utilized to answer the

research questions of the study. Linneberg and Korsgaard (2019) stated that "coding is an

important tool in the process of transforming unprocessed qualitative data into a

communicative and trustworthy "story"" (p. 3). The fundamental process of coding

entails looking at a consistent section of data and labelling it with a single keyword or

phrase that captures its essence to create thematic codes. Finally, in order to develop

themes to answer related research questions, generated codes were analyzed and put into

groups based on shared connections. To determine the most often occurring words in the

script and potential themes, word frequency queries were run in NVivo 12. Using the size

of the text as a guide, themes or patterns that emerged via word clouds revealed the

frequency of the existing codes.

Lastly, both quantitative and qualitative results were examined together to enrich

the discussion section of this research (Cahapay & Anoba, 2020).

The findings of the study, based on both quantitative and qualitative data and

accompanying analysis, are discussed in chapter 4.

Chapter 4: Findings

The purpose of this research is to gain a deeper understanding of the varied in-person teaching experiences of elementary school teachers in the post-COVID world in India. Under this main objective, I also explored the teaching styles, views and attitude of elementary school teachers towards teaching post-COVID-19. I also gain insight into the technological transformation undergone by the teachers and the most preferred and utilized teaching modes (face-to-face, online, and blended) used by elementary school teachers in India after returning to the classroom, post-COVID. This chapter highlights and discusses the findings of the study in light of the following research questions:

1. If and how has gender as a variable affected the teaching style of elementary school teachers in the post-COVID Era?

2. What are elementary school teachers' views of and attitude toward in-person teaching in the post-COVID Era?

3. Which type of teaching model (face-to-face, online, and blended) do elementary teachers prefer after returning to the in-person classroom? Why is this a preferred model?

4. What did elementary school teachers do to improve their knowledge of digital technology in the past two years, as it relates to teaching and learning?

Findings drawn from the collected data and analysis address the research questions and are presented in two sections: In the first section, the quantitative research findings are presented based on the Likert scale survey analysis, and in the second

section, the qualitative research findings are presented based on the semi-structured interview analysis.

4.1 Quantitative Research Findings

Elementary School Teachers' Demographics

The questionnaire was established by the researcher to collect personal information about the participants such as their age, name of school/ institution, sex identity, teaching experience, highest educational qualifications, marital status, experience with ICT, and hours spent on computer usage for teaching.

In total, a hundred elementary school teachers utilizing various pedagogies in different schools completed the online survey. Table 2 and Table 3 presents the demographic information for participants, including their age, name of school/ institution, sex identity, teaching experience, highest educational qualifications, marital status, experience with ICT, and hours spent on computer usage for teaching. As per Table 1,100 teachers participated in the study, with their ages ranging from 20 to 40+. Approximately 37% of the participants were between the ages of 31 to 40 years and 30% were more than 40 years of age. There were very few participants, who ranged between 20 to 30 years old. Most of the elementary teachers were female; that is 84% of the population, and the male elementary teachers comprised 16% of the population. Of the participants, 73% were married, 23% were single and the remaining 4% were either divorced or widowed. In terms of their highest academic degree, more than half of the participants (57%) have a master's degree, 37% of participants have a bachelor's degree, 1% have a doctorate, and 6% belonged to the 'other' category.

Table 2

Demographic Frequencies (n) and Percentages (%) of Study Group (N= 100).

Variables	Study Group	
	Frequency	Percentage
Age:		
20- 25	15	15.0
26- 30	18	18.0
31- 40	37	37.0
40+	30	30.0
Gender:		
Male	16	16.0
Female	84	84.0
Marital Status:		
Single	23	23.0
Married	73	73.0
Divorced	1	1.0
Widowed	3	3.0
Education Qualification:		
Bachelor's Degree	37	37.0
Master's Degree	56	56.0
Doctorate	1	1.0
Others	6	6.0

As per Table 3, the majority of the elementary school teachers (39%) had 1 to 5 years of teaching experience, 24% had 6 to 10 years of experience, 16% had 11 to 15 years of experience, 14% had 16 to 20 years of experience and 7% of teachers had more than 20 years of teaching experience. In relation to their experience of working with ICT, 37% of teachers have 1 to 2 years of experience, 36% of teachers have 3 to 5 years of experience, 15% of teachers have 6 to 10 years of experience, and the remaining 12% have more than 11 years of experience. Lastly, in terms of average time spent daily on the use of computers for teaching, most of the elementary teachers spent 0 to 2 hours (69%), while 23% of teachers spent 3 to 5 hours, and the remaining 8% of the teachers spent more than 5 hours on daily basis.

Table 3

Demographic Frequencies (n) and Percentages (%) of Study Group (N= 100).

Variables	Study Group	
	Frequency	Percentage
Teaching Experience:		
1-5 years	39	39.0
6-10 years	24	24.0
11-15 years	16	16.0
16-20 years	14	14.0
More than 20 years	7	7.0
ICT Experience:		
1-2 years	37	37.0

3-5 years	36	36.0
6-10 years	15	15.0
More than 11 years	12	12.0
Daily computer usage for teaching:		
0-2 hours	69	69.0
3-5 hours	23	23.0
More than 5 hours	8	8.0

Survey Findings

This closed-ended survey questionnaire consists of 24 statements to assess the teaching styles of elementary school teachers in India, attitude and perspective towards teaching, and ways in which they implement lessons post-COVID. Survey findings are divided into two sections, the first one (A) has thirteen statements that examined the teaching style of elementary school teachers post-COVID-19, and the second (B) explores the views and attitude of elementary teachers towards teaching post-COVID-19. Table 4 illustrates the frequencies and percentages of participants' responses on survey statements. Findings indicate that a large proportion (>70%) of the participants strongly agree to agree with every statement, whereas a small proportion (<10%) of participants strongly disagree to disagree on some of the statements.

In terms of teaching style, over 90% of the elementary school teachers agreed that after returning to school post-COVID they experimented with new teaching techniques, used digital platforms for assignments while at the same time they believe that the pandemic has changed the teaching methods. Approximately 90% of teachers prefer to

use digital resources for teaching and digital assessment methods to assess students'

performance after COVID, while only 6% of the teachers disagreed with the statements.

Furthermore, over 80% prefer to teach using digital films, images, presentations, blogs,

etc., to engage learners in the classroom, while 6% of teachers were undecided, and 8%

did not agree. While over 75% of teachers prefer to teach children through simple and

informative presentations in the classroom, approximately 11% were undecided and 9%

disagreed with it. More than 65% of the teachers included video games and augmented

reality apps while teaching in the new normal, while 14% were undecided, and

approximately 17% disagreed. Over 90% of teachers agreed that they prefer to teach in

an indoor classroom setting, only 4% were undecided, and 2% disagreed. While over

80% of elementary teachers prefer to teach in an outdoor environment as the pandemic

had confined children to the home, approximately 10% of them are undecided, and 7%

disagreed. Over 90% of teachers agreed that they organize activities that include the

whole class, 5% of them were undecided, and 3% disagreed. When over 85% of

elementary teachers agreed that they organized individual activities in the classroom

post-pandemic, 9% were undecided. Over 90% of teachers agree that they plan small

group activities like games, drama, etc., in classes, over 4% were undecided, and 2% did

not agree with the statement.

In terms of views and attitude, over 75% of elementary school teachers agreed

that after the pandemic teaching has become easy due to the use of online platforms, 4%

of teachers were undecided, but 20% of teachers disagreed with the statement. More than

95% of elementary school teachers strongly agreed that they used technological tools for

teaching during COVID and they have attained more knowledge related to use of digital

technology in the last two years. Also, over 90% of elementary teachers said that they felt self-motivated to enhance their knowledge of technology over the last two years, 4% of teachers were undecided and 2% did not agree with the statement. When over 40% of the elementary teachers agreed that they do feel exhausted while teaching in the classroom after COVID-19, 19% of the teachers were undecided, and approximately 38% of teachers said that they disagreed. Over 60% of the elementary teachers agreed that the use of computers has affected their productivity, while 14% of them were undecided, and 23% of the teachers disagreed with it. Around 80% of elementary teachers agree that use of computers has positively affected their productivity, approximately 10% of the teachers were undecided, and 9% disagreed with the statement, and they also agreed that because of COVID they have become used to the screens. Around 75% of the teachers agree that technology is overruling education after the pandemic, while 9% of them were undecided, and approximately 15% of teachers did not agree with the statement. More than 40% of teachers agreed that teaching has become difficult and stressful after the pandemic, while 7% of them were undecided, and around 50% of the teachers disagree with the statement. While 85% of elementary school teachers agree that they enjoy teaching in the classroom post-pandemic, 9% of them were undecided, and 4% of teachers disagree with the statement.

Table 4

The Frequencies and Percentages of Response from the Participants for Statements (N=

100)

Statement	Response Frequencies and Percentages					*M*	*SD*
	SA	A	U	D	SD		
Teaching Style							
1. I like experimenting with new techniques when teaching.	55 55.0	43 43.0	1 1.0	0 0.0	1 1.0	1.50	0.63
2. The epidemic has altered my teaching strategies, techniques, and methods.	35 35.0	59 59.0	3 3.0	3 3.0	0 0.0	1.74	0.66
3. After the pandemic, I upload assignments and notes to a digital platform for students to access.	44 44.0	50 50.0	2 2.0	4 4.0	0 0.0	1.66	0.71
4. I use digital resources (instructional software) for teaching after returning to the classroom from a pandemic.	28 28.0	62 62.0	2 2.0	6 6.0	2 2.0	1.92	0.85
5. I prefer using digital assessment methods to assess student learning after COVID.	28 28.0	62 62.0	2 2.0	6 6.0	2 2.0	1.92	0.85

6. After the pandemic I prefer using digital films, images, presentations, blogs, etc. for engaging students.	30 30.0	55 55.0	6 6.0	8 8.0	1 1.0	1.95	0.88
7. I prefer teaching through straight presentations in the new normal classrooms.	17 17.0	61 61.0	11 11.0	9 9.0	2 2.0	2.18	0.89
8. I like to include video games and augmented reality apps to engage learners in the new normal.	14 14.0	55 55.0	14 14.0	15 15.0	2 2.0	2.36	0.97
9. I like to instruct children in a classroom setting.	17 17.0	77 77.0	4 4.0	2 2.0	0 0.0	1.91	0.53
10. I prefer to teach them in an outdoor environment.	21 21.0	62 62.0	10 10.0	5 5.0	2 2.0	2.05	0.83
11. I organize activities that include the whole class (demonstration, Overhead projector, Visits, Watching a video/film) in classes post-COVID-19.	34 34.0	57 57.0	5 5.0	3 3.0	1 1.0	1.80	0.75
12. I organize individual activities (such as computer-aided learning, Essay writing, Practical, and Individual assignments) in classes post-COVID-19.	28 28.0	61 61.0	9 9.0	1 1.0	1 1.0	1.86	0.70

13. I plan small-group activities (small group discussions, Drama, Games) in classes post-COVID-19.	32 32.0	62 62.0	4 4.0	2 2.0	0 0.0	1.76	0.62
Views and Attitudes							
14. With the advent of online platforms, teaching has become easier since the pandemic.	25 25.0	51 51.0	4 4.0	20 20.0	0 0.0	2.19	1.03
15. I use technological tools (computers, laptops, and smartphones) for teaching during COVID-19.	48 48.0	49 49.0	1 1.0	1 1.0	1 1.0	1.58	0.67
16. I have gained more knowledge of the incorporation of digital technology in teaching over the last two years.	51 51.0	46 46.0	0 0.0	1 1.0	2 2.0	1.57	0.74
17. I feel self-motivated to upgrade my knowledge of technology over the past two years.	47 47.0	47 47.0	4 4.0	2 2.0	0 0.0	1.61	0.67
18. In the aftermath of the epidemic, I feel exhausted or become fatigued while teaching.	10 10.0	33 33.0	19 19.0	34 34.0	4 4.0	2.89	1.11
19. The use of computers has affected my productivity after the COVID period.	14 14.0	49 49.0	14 14.0	23 23.0	0 0.0	2.46	1.00

20. It has positively affected my	26	55	10	9	0	2.02	0.85
productivity.	26.0	55.0	10.0	9.0	0.0		
21. Since COVID-19, I have become	26	64	5	4	1	1.90	0.74
used to these screens.	26.0	64.0	5.0	4.0	1.0		
22. I think technology is overruling the	29	47	9	14	1	2.11	1.01
education world after COVID-19.	29.0	47.0	9.0	14.0	1.0		
23. Teaching is complicated and stressful	16	27	7	46	3	2.93	1.23
after the pandemic.	16.0	27.0	7.0	46.0	3.0		
24. I am enjoying teaching after	28	59	9	3	1	1.90	0.76
returning to classrooms post-	28.0	59.0	9.0	3.0	1.0		
pandemic.							

Table 5 presents the outcomes of the overall teaching style, views and attitude highlighting that 91.0% of elementary school teachers have varied teaching style, 8.0% of teachers have partially varied teaching style and only 1.0% of teachers have lack of variation teaching style. In terms of views and attitude of elementary school teachers, 89.0% of them had positive views and attitude, 11.0% of teachers had neutral views and attitude and there was no teacher with negative views and attitude towards teaching in post-COVID. According to the results of the study, most elementary school teachers had positive teaching styles, views, and attitude, while only a few held negative teaching style.

Table 5

Study Group Frequencies (n) and Percentages (%) of Overall Teaching Style, Views, and Attitude (N=100).

Variables	Study Group		*M*	*SD*
	Frequency (*n*)	Percentage (%)		
Teaching style of elementary teachers				
Positive	91	91.0	1.91	0.55
Neutral	8	8.0		
Negative	1	1.0		
Views and attitude of elementary teachers				
Positive	89	89.0	2.01	0.46
Neutral	11	11.0		
Negative	0	0.0		

A one-way ANOVA was used to determine if there is a difference in the mean of different age groups (20-25 years, 26-30 years, 31-40 years, and 40+ years) of elementary school teachers overall teaching style, views and attitude towards teaching. Table 6 illustrates that there was no statistically significant difference in the overall teaching style of different age groups of elementary school teachers, $F(3, 96) = 0.24$, $p = 0.87$. Similarly, there was no statistically significant difference in the overall views and attitude of different age groups of elementary school teachers, $F(3, 96) = 0.39$, $p = 0.76$.

Table 6

A Comparison of Differences in the means of Age Groups of Elementary School Teachers' Overall Teaching Style, Views and Attitude (N=100).

Variables	20-25 years		26-30 years		31-40 years		40+ years		F (3,96)	p
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Teaching style	1.93	0.26	2.00	0.91	1.89	0.46	1.87	0.51	0.24	0.87
Views and attitude	1.93	0.26	2.06	0.73	2.05	0.52	1.97	0.19	0.39	0.76

An independent T-test was used to determine if there is a difference in the mean of male and female elementary school teachers overall teaching style, views and attitude towards teaching. The results of Table 7 indicates that there was no statistically significant difference in the overall teaching style between male elementary teachers (*M*= 2.00, *SD*= 0.52) and female elementary teachers (*M*= 1.89, *SD*= 0.56); t (98) = 0.71, p = 0.48. Moreover, there was no statistically significant difference in the overall views and attitude between male elementary teachers (*M*= 2.00, *SD*= 0.37) and female elementary teachers (*M*= 2.01, *SD*= 0.48); t (98) = 0.10, p = 0.93.

Table 7

A Comparison of Differences in the Means of Gender of Elementary School Teachers'

Overall Teaching Style, Views and Attitude (N=100).

Variables	Male		Female		t (98)	p
	M	*SD*	*M*	*SD*		
Teaching style	2.00	0.52	1.89	0.56	0.71	0.48
Views and attitude	2.00	0.37	2.01	0.48	0.10	0.93

A one-way ANOVA was used to determine whether there is a variance in the mean of marital status (single, married, divorced, and widowed) of elementary school teachers' overall teaching style, views, and attitude towards teaching. The findings in Table 8 revealed that there was no statistically significant difference in the overall teaching style of elementary school teachers with different marital status, F (3, 96) = 0.24, p = 0.87. Also, the marital status of the elementary school teachers did not have statistically significant difference in the overall views and attitude towards teaching in the post-COVID- 19, F (3, 96) = 0.44, p = 0.72

Table 8

A Comparison of Differences in the Means of Marital Status of Elementary School Teachers' Overall Teaching Style, Views and Attitude (N=100).

Variables	Single		Married		Divorced		Widowed		$F(3,96)$	p
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Teaching style	1.83	0.58	1.93	0.56	2.00	0.00	2.00	0.00	0.24	0.87
Views and attitude	1.91	0.52	2.04	0.46	2.00	0.00	2.00	0.00	0.44	0.72

A one-way ANOVA was performed to determine if there is a variation in the mean of education qualification (bachelor's degree, master's degree, doctorate, and others) of elementary school teachers overall teaching style, views, and attitude towards teaching. Table 9 illustrates that there was no statistically significant difference in the overall teaching style of elementary school teachers with different educational qualifications, $F (3, 96) = 1.03$, $p = 0.38$. Also, there was no statistically significant difference in the overall views and attitude of elementary school teachers with differences in educational qualifications, $F (3, 96) = 0.01$, $p = 1.00$.

Table 9

A Comparison of Differences in the Means of Education Qualification of Elementary School Teachers' Overall Teaching Style, Views and Attitude (N=100).

Variables	Bachelor's degree		Master's degree		Doctorate		Others		$F(3,96)$	p
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Teaching style	1.95	0.47	1.89	0.59	1.00	0.00	2.00	0.63	1.03	0.38
Views and attitude	2.00	0.33	2.02	0.56	2.00	0.00	2.00	0.00	0.01	1.00

It was investigated whether there was a variance in the mean of years of work experience (1-5 years, 6-10 years, 11-15 years, 16-20 years, and more than 20 years) of elementary school teachers' overall teaching style, views, and attitudes using a one-way ANOVA. The findings presented in Table 10 show that there was no statistically significant difference in the overall teaching style of elementary school teachers with differences in years of work experience as a teacher, $F(4, 95) = 1.37$, $p = 0.25$. Additionally, there was no statistically significant difference in the overall views and attitude of elementary school teachers with different years of work experience as a teacher, $F(4, 95) = 0.68$, $p = 0.61$.

Table 10

A Comparison of Differences in the Means of Years of Work Experience of Elementary School Teachers' Overall Teaching Style, Views and Attitude (N=100).

Variables	1-5 years		6-10 years		11-15 years		16-20 years		More than 20 years		$F_{(4, 95)}$	p
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Teaching style	1.97	0.49	1.96	0.69	1.63	0.50	2.00	0.56	1.86	0.38	1.37	0.25
Views and attitude	2.10	0.62	1.92	0.41	2.10	0.25	2.00	0.00	1.86	0.38	0.68	0.61

Using a one-way ANOVA, it was evaluated whether there was a difference in the mean number of years of experience working with ICT (1-2 years, 3-5 years, 6-10 years, and more than 11 years) of elementary school teachers' overall teaching style, views, and attitudes. The results shown in Table 11 illustrate that there was no statistically significant difference in the overall teaching style of elementary school teachers with differences in the years of experience working with ICT, F (3, 96) = 2.61, p = 0.06. Besides this, there was no statistically significant difference in the overall views and attitude of elementary school teachers with different years of experience working with ICT, F (3, 96) = 0.21, p = 0.89.

Table 11

A Comparison of Differences in the Means of Years of Experience with ICT of Elementary School Teachers' Overall Teaching Style, Views and Attitude (N=100).

Variables	1-2 years		3-5 years		6-10 years		More than 11 years		*F* (3,96)	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Teaching style	1.92	0.43	2.06	0.63	1.60	0.63	1.83	0.39	2.61	0.06
Views and attitude	2.03	0.44	2.03	0.51	2.00	0.54	1.91	0.30	0.21	0.89

A one-way ANOVA was used to determine if there is a variance in the mean of daily computer usage for teaching (0-2 hours, 3-5 hours, and more than 5 hours) of elementary school teachers' overall teaching style, views, and attitude towards teaching. The results of Table 12 illustrate that there was no statistically significant difference in the overall teaching style of elementary school teachers with differences in the time spent on the usage of computers for teaching each day, $F (2, 97) = 2.47$, $p = 0.10$. Besides this, there was no statistically significant difference in the overall views and attitude of elementary school teachers with a difference in the time spent on the usage of computers for teaching each day, $F (2, 97) = 0.01$, $p = 1.00$.

Table 12

A Comparison of Differences in the Means of Daily Computer Usage for Teaching of Elementary School Teachers' Overall Teaching Style, Views and Attitude (N=100).

Variables	0-2 hours		3-5 hours		More than 5 hours		F (2, 97)	p
	M	*SD*	*M*	*SD*	*M*	*SD*		
Teaching style	2.00	0.56	1.70	0.47	1.88	0.64	2.47	0.10
Views and attitude	2.01	0.47	2.00	0.44	2.00	0.54	0.01	1.00

To recapitulate, based on the analyses of the Likert scale survey questionnaire, it is concluded that over 85% of the elementary school teachers expressed that they have varied teaching style, and overall positive views, and attitude towards teaching in the post-pandemic world. Furthermore, it can also be said that only 15% of the teachers have neutral teaching style, views, and attitude, while less than 5% of them had negative teaching style, views, and attitude. According to the results of the statistical analyses, there is no statistically significant difference between male and female elementary school teachers in terms of teaching style, views, and attitude. Hence, gender as a variable does not affect the teaching style of elementary school teachers in the post-COVD Era. Also, there was no statistically significant difference in the overall teaching style, views, and attitude of different age groups of elementary school teachers.

Further, it was revealed that there was no statistically significant difference in the overall teaching style, views, and attitude of elementary school teachers with different

marital status and that there was no statistically significant difference in the overall teaching style, views, and attitude of elementary school teachers with different educational qualifications. Additionally, it was concluded that there was no statistically significant difference in the overall teaching style, views, and attitude of elementary school teachers with differences in years of work experience as a teacher. Also, there was no statistically significant difference in the overall teaching style, views, and attitude of elementary school teachers with differences in the years of experience working with ICT. Lastly, there was no statistically significant difference in the overall teaching style, views, and attitude of elementary school teachers with differences in the time spent on the usage of computers for teaching each day.

4.2 Qualitative Research Findings

The Semi-Structured Interview:

This section is dedicated to findings emanating from elementary school teachers' responses to eleven interview questions which examined their in-person teaching experiences (in terms of changes in teaching modes, views and attitude of teachers, new teaching strategies, and technological transformation) in India in the post-COVID world.

The teaching style of elementary school teachers in the post-COVID Era

The responses of the participants to the first question "What new teaching strategies have you adopted after returning to the classroom post-pandemic?" were examined using NVivo 12 software to create significant themes from participant responses. Subsequently, a word frequency query was run to identify the most often stated words by the participants. These are further shown in Figure 2 where font size of the word corresponds to the frequency of their occurrence in the participant response. The most commonly used words include: "learning", "digital, "group", "approaches", "devices", "outdoor", "activity", "environment", "electronic", and "experiences".

Figure 2

Word Cloud Analyzing Participants' Responses to the New Teaching Strategies Adopted by the Teachers Post-COVID-19.

Further analysis of participants' responses about the new teaching strategies adopted by the elementary school teachers after returning to school are the use of technological resources. The theme was technological integration. About (50%) of the elementary mentioned that teaching practices now involve more use of technological resources and are technology based. Participants noted:

> I have been incorporating new teaching methods such as using electronic books, Kindle, and digital games. (Male teacher)

> And I also include ICT in my classroom while teaching, I prepare the lesson plans for how I will deliver the topic in my class. (Female teacher)

I have tried to use digital devices such as digital games and electronic books. (Female teacher)

I have been using more digital devices it has become a common way for teaching and engaging children in the classroom. (Male teacher)

I have adopted a blended learning model that incorporates both face-to-face and online learning. I have also adopted new technologies, tools, and platforms to support remote learning and enhanced student engagement. (Male teacher)

The remaining 50% of elementary teachers had different thoughts about the new teaching strategies, some of which are mentioned below:

I have come up with various strategies to get the whole class engaged in an activity to work together towards a goal. (Female teacher)

But I have been trying to teach through more technology-free activities like sewing, origami, and teaching in outdoor environments as due to COVID the kids… (Male teacher)

Personally, I use activity-based teaching strategies, so that students enjoy more, gain more experiences, real hand experiences, and I emphasize learning by doing. (Female teacher)

Participants' responses to the second question *"In what ways have you increased the use of technology in the classroom after returning to teaching?"* were examined using NVivo 12 software to generate significant themes related to the responses of elementary teachers. Subsequently, a word frequency query was run to identify the most

often stated words by the participants. These are further shown in Figure 3 where font

size of the word corresponds to the frequency of their occurrence in the participant

response. The most common words used by elementary teachers in terms of changes

needed in the curriculum to continue teaching in post-pandemic, are: "learning",

"digital", "reality", "projectors", "games", "audio", "content", "augmented", "platforms",

and "educational".

Figure 3

Word Cloud Analyzing Participants' Responses to Ways in Which the Use of Technology

has Increased in the Classroom Post-COVID-19.

Furthermore, while analyzing the participants' responses to the ways in which the

use of technology has increased in the classroom in the post-COVID Era, the following

theme were identified: increased use of various digital resources for teaching-learning.

Almost all the participants said that they have been using various digital resources in the

classroom to engage the students after the pandemic, the teachers also mentioned that they had increased the use of technology in classroom post pandemic.

In relation to the theme the increased use of various digital resources for teaching in the classroom post-COVID-19, participants commented:

The use of technology has increased in the classroom post-COVID-19 in different ways such as Playing digital learning games, smart boards, and watching movies. (Female teacher)

So, in my class, I use TV, screens, projectors, and mobile to show them real-time examples related to the topic it will help the students to understand the topic easily. (Male teacher)

To engage learners in the classroom I have been using different audio-visual learning materials, and also, included digital games and e-books in the classes. (Male teacher)

Educational videos, YouTube videos, augmented reality, virtual reality these are some kind of techniques I use in my classroom. (Female teacher)

I use projectors to show various audio-visual aids to children in the classroom. (Female teacher)

Yes, the use of technology has increased in the classroom as we create short audio or video clips to supplement enhance learning experience. (Male teacher)

I have embraced online learning platforms such as Google Classrooms or Microsoft teams to facilitate remote learning and manage assignments. Many lectures or classes are recorded to assist students in learning. (Male teacher)

I have been using technology for teaching lessons in an interactive way to engage students and enhance their learning experiences. (Male teacher)

Yes, the use of technology has increased in the classroom as we create short audio or video clips to supplement and extend classroom instruction. (Female teacher)

The views and attitude of elementary school teachers towards teaching in the post-COVID Era

The responses of the participants to the third question *"In what ways have educational practices changed in the post-COVID world?"* were examined using NVivo 12 to develop significant themes based on the responses of participants. Subsequently, a word frequency query was run to identify the most often stated words by the participants. These are further shown in Figure 4 where font size of the word corresponds to the frequency of their occurrence in the participant response. The most used words are: "digital", "learning", "online", "mental", "devices", "activity", "practices", "health", "resources", and "engage".

Figure 4

Word Cloud Analyzing Participants' Responses to the Changes in the Educational

Practices post-COVID-19.

Upon further analysis of participants' responses about the changes in the

educational practices post-pandemic two themes were identified: digitalization of

education and mental health of children. In relation to the first theme, the elementary

teachers mentioned that educational practices have changed due to the digitalization of

education. Participants stated:

> There has been a rapid shift towards online learning as online learning has
>
> emphasized the need for technology-enhanced classes such as virtual classrooms,
>
> and online notes. (Male teacher)

I've noticed that courses that have exclusively been offered in person are now always offering an online component along with the face-to-face. (Female teacher)

Both students and teachers have moved to technology and digital devices rather than using chalk and board. (Male teacher)

The most important change is the technology-based education system or the digitalization of education. (Male teacher)

The COVID-19 pandemic provides a positive situation for me to learn and read about online learning and learning digital devices. After the COVID-19 I have used digital games in math class, and it helps my students to learn deeply. (Female teacher)

We have also become more dependent on technology for teaching and its usage has increased in the classroom. (Male teacher)

For the second theme, mental health of children, the participants said that educational practices have changed as they focus more on the mental health of children post-pandemic. Participants noted:

This pandemic has also brought attention to the importance of mental health and many schools and universities have integrated mental health support and resources into their educational program. (Male teacher)

Children are taught more about mental health in school and schools are more prepared for different learning styles and abilities. (Female teacher)

Also, the education practice focuses on the mental health of children after

returning from the pandemic. (Male teacher)

Participants' responses to the fourth question *"What changes do you feel are*

needed in the curriculum to continue teaching in the new normal?" were examined using

NVivo 12 software to generate significant themes related to the responses of elementary

teachers. Subsequently, a word frequency query was run to identify the most often stated

words by the participants. These are further shown in Figure 5 where font size of the

word corresponds to the frequency of their occurrence in the participant response. The

most common words used by elementary teachers in terms of changes needed in the

curriculum to continue teaching in post-pandemic, are: "learning", "skills",

"digitalization", "teaching", "blended", "burden", "learner", "experimental", "student",

and "centric".

Figure 5

Word Cloud Analyzing Participants' Responses to Changes Needed in Curriculum to

Continue Teaching in Post-COVID-19.
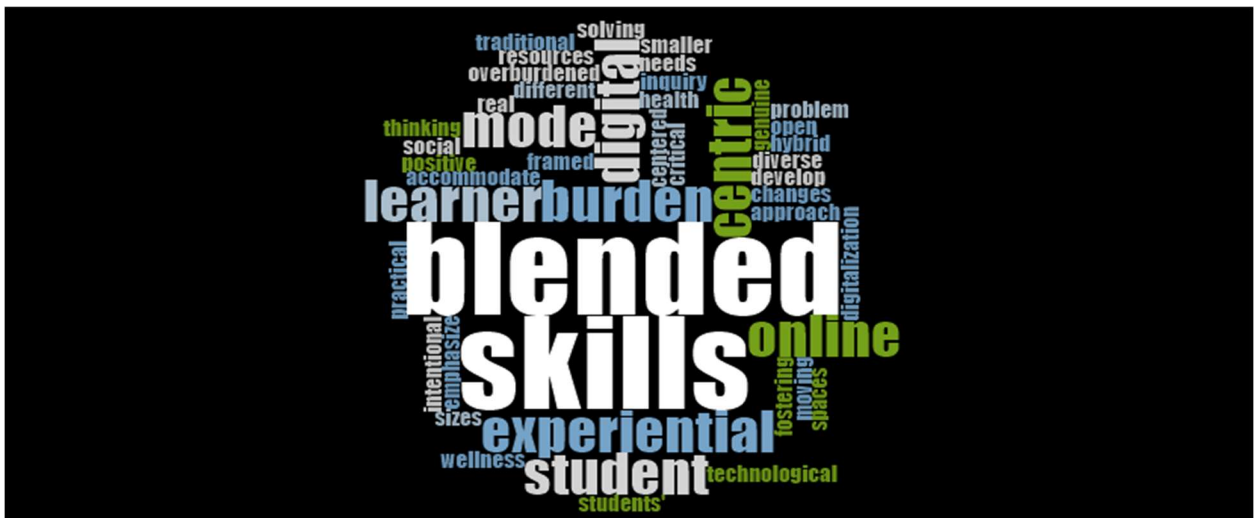
Upon further analysis of participants' responses about the changes needed in the curriculum post-pandemic following two themes emerged: blended learning curriculum and learner centric.

The most relevant theme noted was that the curriculum should be based on blended mode of teaching and learning (80%). Participants' responses include:

As per my understanding, the curriculum should be framed according to the blended teaching-learning model. (Female teacher)

The curriculum needs to be based on a blended teaching mode. (Male teacher)

I feel the curriculum has the new change that is moving to digitalization from traditional learning. (Male teacher)

It should be designed using a blended teaching approach since it gives freedom of space, time, and money. (Female teacher)

For the second theme 10% of the elementary teachers stated that the curriculum should be learner centric. Participants' responses include:

We need a student-centered, inquiry-based, genuine, and intentional education. (Male teacher)

The curriculum should be learner-centric, engaging, and based on experiential learning. (Male teacher)

On the other hand, some other elementary teachers had different views on changes needed in the curriculum to continue teaching post-pandemic. The comments include:

It should be focused on the students to develop their social skills and should lessen the burden on students. (Male teacher)

I feel to include an emphasis on technology and digital skills, integration of health and wellness and adaptation to remote learning, integration of critical thinking and problem-solving skills. And the real world and practical learning experience. (Female teacher)

The response of the participants to the fifth question *"How do you feel about returning to the classroom after a pandemic? Are there any challenges that you are facing while teaching or in the classroom?"* were examined using the NVivo 12 program to create significant themes from participants' responses. Subsequently, a word frequency query was run to identify the most often stated words by the participants. These are further shown in Figure 6 where font size of the word corresponds to the frequency of their occurrence in the participant response. The most commonly used words include: "outdoor", "good", "back", "classroom", "environment", "masks", "hygiene", "clean", "sanitize", and "anxiety".

Figure 6

Word Cloud Analyzing Participants' Responses about Returning to the Classroom and the Challenges Post-COVID-19.

In response to the first part of the question, about the feeling of being back at school post-pandemic, the majority of the participants (90%) stated that "It feels good to be back", or "I like returning to class" while the remaining participants' (10%) noted that they "Do not like to be back". The participants mentioned that:

Well, it feels so good to be back at school as we have a good working environment and chance to connect with the students and teachers personally. (Male teacher)

It is amazing to be back and to be able to see the faces of smiling students and teachers back in the classroom. (Male teacher)

I feel amazing to be back at school as we get to meet our students and colleagues in person. (Female teacher)

It felt really good after attending the classroom post-COVID, as I could meet everybody in-person. (Female teacher)

I would not like to return to a class after being in a home office. I feel more comfortable and productive if I work from home. (Male teacher)

For the second part of the question, are there any challenges that you (teachers) are experiencing upon returning to the classroom. After analyzing the participants' responses the following two themes were developed: maintaining health and hygiene and feeling exhausted and anxious.

The most relevant theme that was noted after returning to the classroom is that the teachers have to be extra careful in maintaining health and hygiene (80%). Participants mentioned that:

Some of the challenges faced with the ongoing pandemic, there is a need to implement measures such as social distancing, washing hands frequently, wearing masks to minimize the risk of infection. (Male teacher)

It also became difficult to teach with masks on the face and to sanitize the classroom and materials, such as art supplies. (Male teacher)

Because of the pandemic, we all have to keep everything clean and sanitized all the time. (Female teacher)

The major challenge upon returning to school is maintaining the health and hygiene of children and the classroom as due to Covid we had to be extra careful, needed to sanitize all the things, and put on face masks. (Female teacher)

Also maintaining hygiene and sanitizing all the time was a very big challenge for me. (Male teacher)

For the second theme, feeling exhausted and anxious, 20% of the elementary teachers stated that they become tired, exhausted and anxious after returning to school. Their responses include:

Yes, there were a few challenges that I faced in the classroom like I become exhausted while teaching. (Female teacher)

One of my biggest challenges in the classroom is learning anxiety and anxiety about… (Male teacher)

I definitely struggle to get back into a classroom routine and feel more anxious. (Female teacher)

I faced a few difficulties, such as fatigue and anxiety issues while teaching. (Male teacher)

The teaching methods preferred by elementary teachers post-COVID-19

Participants' responses to the sixth question: *"Which mode (face-to-face, online, or blended mode) of teaching do you prefer? Why do you consider it a good mode to teach?"* were assessed using NVivo 12 to create relevant themes related to responses, afterward, a word frequency was run to create a word cloud and to identify the most

commonly used words or phrases. These are further shown in Figure 7 where font size

of the word corresponds to the frequency of their occurrence in the participant response.

The most common words used by elementary teachers in terms of the best mode of

teaching after the pandemic and the reason for considering it as a good mode to teach,

are "hybrid", "offline", "accessibility", "communication", "commute", "flexibility",

"skills", "guided", "teach", and "time".

Figure 7

Word Cloud Analyzing Participants' Responses to The Best Mode to Teach After

Pandemic
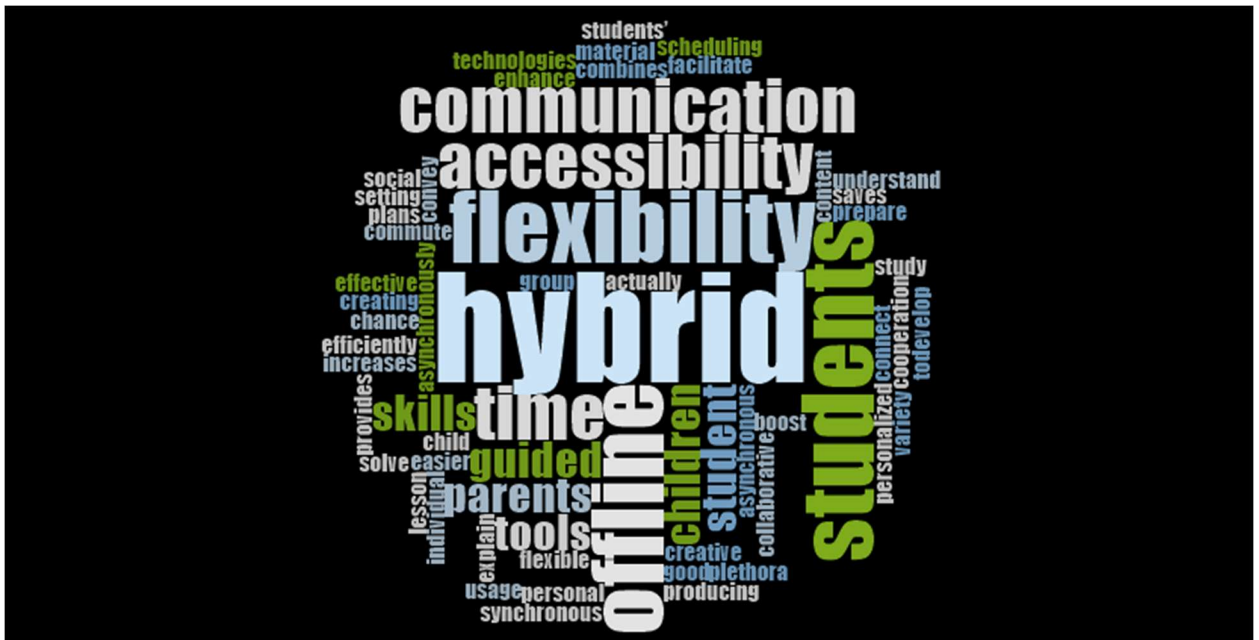
In response to the first part of the question, which asked about the most preferred

mode (face-to-face, online, or blended mode) of teaching, half of the participants (50%)

responded with statements such as "I like blended mode", or "Hybrid mode" while the

remaining participants of them (50%) stated "I prefer the face-to-face method", or "offline mode". The participants mentioned that:

> I prefer to teach in blended mode, although each teaching mode has its own advantages. (Male teacher)

> I prefer to teach children in the blended mode of teaching. (Male teacher)

> I prefer face-to-face teaching as I see this as much more engaging. (Male teacher)

> I prefer face-to-face teaching. Face-to-face teaching is a good mode to connect with students. (Female teacher)

> I prefer the blended mode of teaching. (Female teacher)

> I prefer face-to-face mode of teaching. (Male teacher)

> I like to teach kids in a blended setting as it helps to connect in both the offline and online mode. (Female teacher)

Upon further analysis of the participant's response to the second part of the question related to the reason for considering blended or face-to-face as a good mode to teach, the following themes were identified: flexibility and connection. Fifty percent of elementary teachers said that the blended mode of teaching provides flexibility and accessibility, and this was the most prominent theme. Participants commented that:

> This mode can provide a personalized personal learning experience for a student as well as accessibility to teaching. (Male teacher)

> Moreover, blended mode provides us flexibility and accessibility to teaching using a plethora of tools, and technologies. (Male teacher)

I like to teach kids in a blended mode of teaching as it gives us the flexibility to teach offline and online. (Male teacher)

Hybrid classes provide the flexibility of home study and flexible scheduling. (Female teacher)

A few of the elementary school teachers mentioned that they like to teach using both face-to-face and online methods of teaching after COVID-19:

I prefer both face-to-face and online for the requirement of the syllabus and my curriculum. If any of my students could not understand the topic in class, and if they want help at his home, then I can solve their query using the online method. It will also facilitate flexibility as well as accessibility in teaching. (Female teacher).

In relation to the second theme, connection, 50% of the elementary teachers mentioned that they prefer to teach face-to-face because it provides better connection, understanding, engagement, and communication with the students.

Teaching face-to-face allows for easier group collaborative work which can build on the children's skills such as social, communication, and cooperation. (Male teacher)

Face-to-face gives us opportunities to understand students better, and also, I can know if they are able to follow the instructions properly. (Female teacher)

I think in face-to-face learning, we have a chance to connect with our students, to understand better. (Male teacher)

I prefer face-to-face teaching as I see this as much more engaging. (Male teacher)

I like to teach kids in an offline setting as it helps to boost student engagement, aid in skill development, provide effective time usage for producing new content, and facilitation of imaginative lesson ideas. (Female teacher)

Participants' responses to the seventh question: *"In which teaching method/ mode do students respond the best? Why*?" were evaluated with NVivo 12 to generate themes that were significant according to the responses of the participants. Subsequently, a word frequency query was run to identify the most often stated words by the participants. These are further shown in Figure 8 where font size of the word corresponds to the frequency of their occurrence in the participant response. The most frequent words used by elementary teachers in terms of the best method in which students respond include: "direct", "physically", "connection"; "interactive", "engage", "develop", "cooperation", "students", "activities", and "teamwork".

Figure 8

Word Cloud Analyzing Participants' Responses on The Best Method in which Students Respond Post-COVID-19.

In response to the first part of the question, 90% of the elementary teachers mentioned that the students respond the best to the face-to-face teaching method and only 10% of them said that the students respond well to the blended mode of teaching. The participants commented that:

> I personally feel that in blended learning student response is best as it offers the benefits of both home and school and allows for the more personalized and flexible learning experience. (Male teacher)

> I think students respond the best when they are present physically in the classroom as they can easily make a connection between the real and imaginary world. (Male teacher)

Students give their best performance in face-to-face teaching method because students are in direct contact with their teachers and peers which help them to develop various skills. (Male teacher)

In the face-to-face mode of teaching students actively participate in class and have a good connection with each other. (Female teacher)

I believe that kids respond most effectively to the face-to-face method of teaching. (Female teacher)

Furthermore, while analyzing the responses for the second part of the question to determine why the students respond best in face-to-face, or blended mode, the following four themes were recognized: developing connection, developing skills, learning in open space, and dynamic learning experiences. For the first theme teachers stated that 50% of the students develop strong connection with teachers and peers in the face-to-face mode of teaching. The second theme recognized that 40% of the children develop life skills in face-to-face teaching, the third theme revealed that 30% of the students can learn in open space when they are physically present in school. For the final theme 10% of the teachers illustrated that in a blended mode of teaching students have the opportunity to gain a dynamic learning environment.

Most of the elementary school teachers mentioned that the students respond best to the face-to-face method of teaching-learning as they make connections with their peers, develop bonds, and interact with each other when they are physically present in the classroom. Participants' comments include:

They could easily make a connection between the real and imaginary world. (Male teacher)

Face-to-face children respond more because it's human-to-human interaction which is a necessity for everyone to thrive and children respond to caring and supportive adults and are more willing to listen and learn in those environments. Furthermore, it helps children to connect with their classmates and share their abilities. (Female teacher)

Face-to-face learning provides opportunities for students to interact and connect with their classmates and share their experiences and abilities. (Female teacher)

They will also connect with their peers and develop bonds with each other. (Male teacher)

Since they can more easily make connections between conceptual and practical knowledge. (Female teacher)

In relation to the second theme, developing skills, the elementary teachers said that the students develop various life skills when they are physically present in the classroom. Participants noted that:

Students can develop various life skills such as cooperation, friendship, sharing, teamwork, a sense of community, and so on. (Male teacher)

Students are in direct contact with their teachers and peers which helps them to develop various lifelong skills. (Male teacher)

It'll also help to develop various life skills like cooperation, teamwork, and sharing. (Male teacher)

It's human-to-human interaction that is a necessity for everyone to thrive and children respond to caring and supportive adults and are more willing to listen and learn in those environments. (Female teacher)

For the third theme, learning in open space, the participants mentioned that in the face-to-face method children have the opportunity to learn and explore in an open space:

They can also play various games in an open learning environment. (Male teacher)

And also, this method helps them to improve their physical health by playing and participating in outdoor activities. (Male teacher)

Additionally, students can engage in a variety of games in a setting conducive to learning and learn in an open space. (Female teacher)

Regarding the last theme, dynamic learning environment, the elementary teachers said the children respond well to the blended mode of teaching as they have the flexibility to learn in two different modes:

Because in this learning method, students can have access to multimedia resources, interactive activities, online discussion, direct interactions with the teachers, and face-to-face setting. This combination can provide the students with a more engaging and dynamic learning experience. (Male teacher)

Hybrid mode of learning may be more flexible and convenient and offers different settings and platforms to them. (Female teacher)

The responses of the participants to the eighth question *"Which teaching method do you find most effective for connecting with your students? Why?"* were analyzed with NVivo 12 to create themes that were significant based on the participants' responses. Subsequently, a word frequency query was run to identify the most often stated words by the participants. These are further shown in Figure 9 where font size of the word corresponds to the frequency of their occurrence in the participant response. The most used words are: "relationship", "physical", "participation", "face", "connection", "blended", "activities", "supportive", "children", and "group".

Figure 9

Word Cloud Analyzing Participants' Responses on the Most Effective Teaching Method of Connecting with the Students post-COVID-19.

In response to the first part of the question about the most effective teaching method (face-to-face, online, or blended mode) for connecting with the students, the majority of the participants (80%) responded with statements such as "I like in-personal teaching method", or "face-to-face mode" while the remaining participants (20%) have response such as "I like both offline and blended method". The participants mentioned that:

One approach I found to be effective with students is the face-to-face teaching method. (Male teacher)

In-personal teaching method is the most effective way to connect with the students. (Male teacher)

Face-to-face is a good way to connect with children as one can teach in real time classroom. (Female teacher)

According to me, both offline and blended modes of teaching are good for connecting with the students. (Male teacher)

Both the teaching method that is blended mode of teaching and face to face method is more effective for connecting with students. (Female teacher)

The best way to engage students is through one-on-one instruction since. (Male teacher)

Upon further analysis of the participants' responses to the second part of the question about why teachers consider it the most effective way to connect with students, the following themes were identified- learning in different spaces, active engagement and

participation, and social and emotional connection. The majority of the teachers said that they can connect effectively with students in the face-to-face teaching method because of active engagement and participation (60%), which was the most prominent theme, followed by the fact that they can also build a social and emotional bond with the students (30%). The final theme identified was in the blended mode of teaching in which teachers have the autonomy to teach and connect in different spaces (10%).

In relation to the first theme, the elementary teachers mentioned that the most effective method to connect with students is the offline method because they can actively engage and participate in classroom activities. Teachers noted:

Face-to-face method of teaching can help us to build a supportive and engaging learning environment where students feel valued and motivated to learn. (Male teacher)

Also, it gives more opportunities to participate in activities and lessons with students. (Female teacher)

I prefer face-to-face teaching-learning because children can actively engage in class with their peers and do group activities. (Male teacher)

Face-to-face teaching provides more opportunities for me to participate in activities and lessons with my students and to establish a better relationship with them. (Female teacher)

We can better connect with them in a physical learning environment where we can do group activities, have one-on-one conversations with them, and take into account their unique learning needs. (Male teacher)

Regarding the second theme, social and emotional connection, the participants mentioned that face-to-face teaching promotes social and emotional connection between student and teacher. Some of the comments include:

In physical learning space, we conduct group activities, have better connection and conversations with children as we can experience their emotions, talk with them personally, and look towards individual needs of children in the classroom. (Male teacher)

Face-to-face teaching provides more opportunities for me to participate in activities and lessons with my students and to establish a better relationship with them. (Female teacher)

Due to physical presence in class, there will be an emotional bond between teacher and student, and also… (Male teacher)

In relation to the final theme, learning in different spaces, the participants said that the most effective method to connect with children is blended mode of teaching as it provides an opportunity to learn in different spaces. Participants said:

It provides autonomy to teachers and children to learn in different spaces. In face-to-face method we ensure equal participation of each kid in the classroom and in blended mode we connect in both online and offline learning spaces. (Male teacher)

In the blended mode of teaching, it is more flexible to teach. In face-to-face teaching, we can observe the students and understand them. (Female teacher)

The technological enhancement endured by elementary school teachers to improve their knowledge

Participants' responses to the ninth question *"Which professional development training or program did you attend during the COVID or after the COVID period to enhance your technological skills and knowledge?"* were examined using NVivo 12 to develop a word cloud using a word frequency query. Subsequently, a word frequency query was run to identify the most often stated words by the participants. These are further shown in Figure 10 where font size of the word corresponds to the frequency of their occurrence in the participant response. The most used words are: "course", "government", "sessions", "institution", "workshops", "foundation", "literacy", "doeacc", "Microsoft", and "office".

Figure 10

Word Cloud Analyzing Participants' Responses to Professional Development Training Attained by Teachers to Enhance their Technological Skills Post-COVID-19.

Further analysis of participants' responses about the professional development training attended by elementary school teachers to enhance their technological skills and knowledge post- COVID-19 noted that all the teachers have attended some training or courses to enhance their technological skills. Almost all of the participants indicated that they "Attended short training", "Undertaken few courses" or "Did workshops". The responses of the participants include:

> I attended some training sessions and workshops that were provided to me by my institution related to the pandemic such as basic Google classroom managing skills. (Male teacher)

> I attended some of the short training and workshops that were provided to me by my institution amid the pandemic such as Microsoft Office, and basic computer training. (Female teacher)

> During the COVID period, I attended a few of the workshops and training sessions organized by my institution such as Microsoft Office, and Course on Computer Concepts (CCC). (Male teacher)

> I have undertaken a few of the courses initiated by the government of India and our school. (Female teacher)

> I also took a DOEACC 'o' level course, which helped me build a solid foundation in computer technology. (Female teacher)

> During the pandemic, my institution offered me several brief training sessions and workshops, including those on Microsoft Office and the fundamentals of computer training. (Male teacher)

The Indian government is providing Foundational Literacy and Teaching

Learning Materials Enhancement program. (Male teacher)

The responses of the participants to the tenth question *"How do you manage your*

work-life balance post-COVID? Has the amount of work and stress increased or

decreased?" were analyzed with NVivo 12 to create a word cloud from the most often

stated words by the participants. These are further shown in Figure 11 where font size of

the word corresponds to the frequency of their occurrence in the participant response. The

most used words are: "pressure", "schedule", "tasks", "plan", "difficult", "anxiety",

"distribution", "stability", "time", and "list".

Figure 11

Word Cloud Analyzing Participants' Responses of How Teachers Manage their Work-

Life Balance Post-COVID-19.
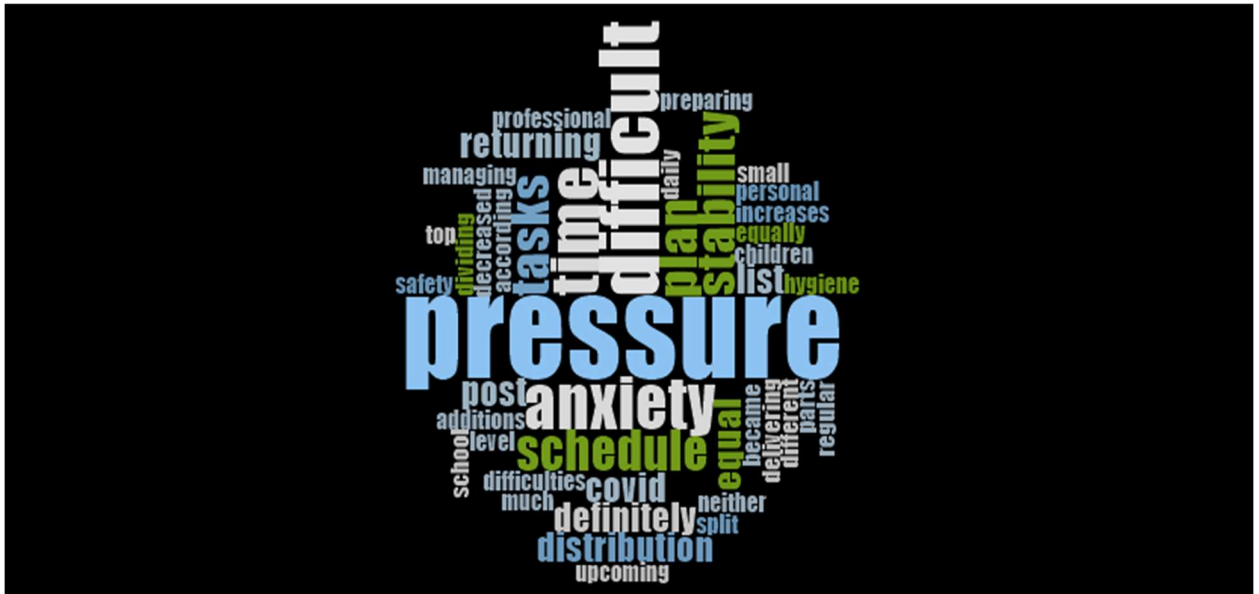
For the first part of the question, the majority of the participants' responses were

that it has become difficult to manage their work-life balance post-pandemic and they

manage it by making a schedule, doing equal distribution of work, and preparing a to do list. The participants mentioned that:

> After COVID-19 it has become difficult to manage the work-life I try to manage it by doing equal distribution of time for various tasks, and also by preparing a to-do list a day earlier. (Male teacher)

> I try to manage it by dividing my time equally between different tasks and making a daily schedule. (Female teacher)

> I try to work on day-to-day basis and finish all the work simultaneously instead of leaving it for another day. (Female teacher)

> It has become difficult to manage school and home at the same time but I try to finish all the work simultaneously instead of leaving it for another day. (Female teacher)

> I try to manage my work-life balance by making a schedule and I also plan for upcoming days before. (Male teacher)

> I manage my work life very well. I do all my work according to the plan, which I decided on earlier. (Female teacher)

In response to the second part of the question, about the amount of work and stress post-pandemic, all of the participants have responses such as "Yes it has increased", or "the work and stress have increased". Some of their comments include:

> The work and stress have increased because I feel that on top of the regular work, there have been so many additions. (Male teacher)

Yes, the stress level has increased after returning to the classroom as it has become difficult… (Female teacher)

Yes, the amount of work post-COVID has increased as we have to be extra conscious about hygiene. (Female teacher)

It has increased a lot of stress post-pandemic. (Male teacher)

As we returned to school after a long break, stress and anxiety increased. (Female teacher)

Participants' responses to the last (eleventh) question *"Has your on-screen time increased since the schools reopened?"* were examined using NVivo 12 software to generate a word cloud and identify the most frequently used terms or phrases used by the participants. These are further shown in Figure 12 where font size of the word corresponds to the frequency of their occurrence in the participant response. The most common words used by elementary teachers in terms of changes needed in the curriculum to continue teaching in post-pandemic, are: **"**study", "tools", "lesson", "projectors", "meetings", "laptops", "visual", "assignments", "administrative", and "computers".

Figure 12

Word Cloud Analyzing Participants' Responses to has the On-screen Time of Teachers Increased Post-COVID-19.

Further analysis of participants' responses about the increase in the on-screen time of elementary school teachers after returning to the classroom, almost all of the participants have responses such as "Yes on-screen time has increased". Their responses include:

Yes, my screen time has increased since the school opened because I prefer blended learning mode. (Female teacher)

Yes, my screen time has increased since I returned to school after COVID-19 as now I am using many technological tools to teach and give assignments to students. (Male teacher)

After returning to school my on-screen time has increased as I do all my work and meetings using technology. (Female teacher)

Yes, my screen use time has increased approximately from 4 to 5 hours. As I have been using laptops and smart board screen more in the classroom for teaching-learning. (Male teacher)

Yes, it has increased a lot and now I have to give more time to learn the new teaching methods. I do most of my work using screens. (Male teacher)

Yes, since I started attending school again after COVID-19, I have spent more time on my screen because I have been using it for making lesson plans, teaching aids and so on. (Female teacher)

Yes, for sure the use of tech in teaching has increased as I am using more technological tools and devices in the classroom. (Male teacher)

To sum up, the findings of the study attained from the qualitative analysis revealed that half of the elementary school teachers have introduced new teaching practices now that involve more use of technological resources and are technology-based while the other half of the population is using several different teaching styles for teaching their students. The majority of the teachers mentioned that since they have returned to the classroom, they have increased the use of various digital resources to engage learners, and the rest of them are also using technology in numerous ways for teaching. Further, elementary school teachers reported that educational practices have changed after the pandemic due to the digitalization of education, and also the focus on the mental health of students has increased after COVID-19. Most of the teachers said

that after COVID-19 there is a need to update the curriculum by introducing a blended mode of teaching-learning in the classroom and others emphasized that the curriculum should be learner-centric. The majority of elementary teachers revealed that they feel good upon returning to the classroom and teaching in person, but a few said that they do not like returning to school. Later the participants mentioned that they are experiencing some challenges as they have to be extra conscious in maintaining health and hygiene and they also feel exhausted and anxious after coming back to class.

While half of the elementary school teachers reported that they prefer to teach in a blended or hybrid mode of teaching after the pandemic because it provides flexibility and accessibility, the remaining teachers said that they like to teach in the face-to-face method as it provides better connection, understanding, and communication with the students. Furthermore, the majority of teachers mentioned that the students respond best to face-to-face teaching method because it helps to build up connections with peers and learn in an open space. Only a few of them said that the students respond well in the blended mode of teaching as they have the flexibility to learn in two different modes. Most of the educators revealed that they can connect better with their students in the face-to-face method because they can actively engage and participate in classroom activities, while the rest of them said that they can connect effectively in the blended mode of teaching as they have the autonomy to teach and connect in different spaces. Further, all the elementary school teachers responded that they had attended several professional development trainings which were organized by their institution and the government of India to enhance their technological skills and knowledge post-COVID-19. The majority of the teachers mentioned that it has become difficult for them to manage work-life

balance post-pandemic, but they manage it by making a schedule, doing equal

distribution of work, and they also said that the amount of work and stress has also

increased post-pandemic. Lastly, the teachers reported that their on-screen time has

increased since they returned after the pandemic as they are using more technological

tools for teaching, lesson planning, assignments, and administrative work.

Chapter 5: Discussion

This research explores in-person teaching experiences of Indian elementary school teachers in the post-COVID Era. Throughout this chapter, I discuss the findings of the study based on previous studies (literature) and the research questions. Further, I conclude by discussing the significance and educational implications of the study.

The Teaching Style of Elementary School Teachers in the Post-COVID Era

The first research question examined the effect of gender as a variable on the teaching style of elementary school teachers in the post-COVID Era. According to the results of the quantitative data analysis that are presented in Tables 4 and 5, the majority of the elementary school teachers expressed that they have varied teaching style (they employed different teaching styles in the classroom) in the post-pandemic world. Only a small percentage of elementary teachers had a lack of variation in their teaching styles in the classroom. According to the results of the statistical analyses in Table 7, there is no statistically significant difference between male and female elementary school teachers in terms of teaching style, views, and attitude. Hence, gender as a variable does not affect the teaching style of elementary school teachers in the post-COVID Era in India. The findings of my study are mostly similar to previous literature as Öznacar et al. (2017) found that gender as a variable had no significant impact on teaching styles. The only difference was in their personal model, that is, every teacher has a separate style of teaching.

Further, in Tables 6, 7, 8, 9,10, 11 and 12 it was reported that there was no statistically significant difference in the overall teaching style of elementary school

teachers with different demographic data such as age, gender, educational qualifications, marital status, work experience, and experience of working with ICT. Similar results were found in the study conducted by Öznacar et al. (2017) in that there is no significant difference between the teaching style of teachers and their educational background or marital status. On the other hand, Vikas and Mathur (2022) stated that there are several other factors that influence a teacher's teaching style, including educational qualification, skills, and the number of years they spent teaching in the classroom (experience) because as teachers gain more experience over the years, they keep on enhancing their teaching practices.

The self-efficacy theory serves as the foundation for my research which states that the self-efficacy of a teacher is their "personal belief in their own ability" to design, plan and execute educational objectives to teach efficiently and achieve learning outcomes (Gavora, 2010, p. 18, as cited in Joo et al., 2018, p. 49). Moreover, self-efficacy, in particular, serves as the most potent element influencing teachers' behaviour and practice (Henson, 2001; Tschannen-Moran & Hoy, 2001). Therefore, I have utilized this framework to assess the teaching style of teachers in the post-pandemic. The findings of the qualitative analysis revealed that elementary school teachers (both male and female) have introduced new teaching strategies and techniques to continue teaching in the new normal. Post-pandemic elementary teachers have introduced various strategies to engage their classroom students in an activity to work together towards a goal and also, use activity-based teaching strategies, so that students enjoy learning, cultivate creative thinking, and gain real hand experiences. Introducing new teaching methods such as using electronic books, Kindle, digital games, SMART Board, and various audio-visual

aids. The findings of this study are consistent with those of numerous other studies that are discussed in the literature. For instance, Aivazidi and Michalakelis (2021) stated that during the pandemic educators developed, acquired, and utilized the knowledge, techniques, and traits necessary to support teaching-learning using technology effectively and creatively. Another study conducted by Lizana et al. (2021) mentioned that elementary teachers need to structure their lessons in this new normal so that they are actually providing direct assistance to their pupils through demonstrating, mimicking, group activities, collaborative work, and other means. Hurriyetoglu and Kilicoglu (2020) noted that teachers should provide instructions that are inquiry-based, discovery-based, and play-based to engage learners in the classroom post-pandemic.

Furthermore, Hurriyetoglu and Kilicoglu (2020) revealed that few teachers have changed their teaching style upon returning to the school as they prefer to use technologies that enable student engagement and constructivist learning and enhance their existing teaching styles. Similarly, my study also reported that after returning to the classroom most of the teachers have increased the use of technology for teaching, lesson planning, assignments, and administrative work, and have also increased the use of various digital resources to engage learners interactively. Hence, in the light of self-efficacy theory, the findings of the study highlight that elementary school teachers are confident about their teaching approaches post-COVID-19, and they have incorporated technology into their teaching practices to engage students effectively in learning post-pandemic. Their confidence is reflected in the development and adoption of new teaching styles as they have attended various professional development training and workshops during and after the pandemic.

The Views and Attitude of Elementary School Teachers towards Teaching in the Post-COVID Era

The second question of the research explored the views and attitude of elementary school teachers towards teaching in the post-COVID period. According to the results of the quantitative data analysis, that are presented in Tables 4 and 5, the majority (89%) of the elementary school teachers expressed overall positive views and attitude towards teaching in the post-pandemic world. Only a small percentage (11%) of elementary teachers had neutral or negative views and attitude towards teaching. According to Maheswari (2016) a positive attitude of teachers would contribute to the creation of an encouraging and enlightening environment for teachers as well as students, whereas the negative attitude of teachers would make the task of teaching challenging, and consequently, learning would become monotonous for the students.

Moreover, the study stated that there was no statistically significant difference in the overall views and attitude of elementary school teachers with different demographic data such as age, gender, educational qualifications, marital status, work experience, and experience of working with ICT. Some of the prior studies are similar to my study for instance, according to the study conducted by Amram and Davidovitch (2021) on teachers' attitudes regarding e-teaching during COVID-19 it was revealed that female teachers had a more positive attitude toward virtual teaching than male teachers. Giovannella, Marcello, and Donatella (2020) also revealed that teachers had positive views about teaching with technology as they could teach in their comfort zone. A few studies such as Jain et al. (2020) and Maheshwari (2016) reveal that most teachers are positive and self-motivated, in addition to taking responsibility for their professional

development. On the other hand, some studies contradicted my research findings such as the study conducted by Shakoor and Farrukh (2018) which concluded that the majority of male elementary school teachers have less favourable attitudes towards the profession than the majority of female teachers, but their percentage is lower. Furthermore, only a few teachers have a positive attitude toward teaching. Karalar and Sidekli (2021) revealed that there was no significant variation in attitude toward e-learning among elementary school educators according to gender.

Based on the findings of the qualitative analysis, elementary school teachers reported that educational practices have changed after the pandemic due to the digitalization of education, and also the focus on mental health of students has increased after COVID-19. The majority of the participants mentioned that they are experiencing some challenges as they have to be extra conscious in maintaining health and hygiene and they also feel exhausted and anxious after returning to their face-to-face classrooms. Further, the teachers also mentioned that it has become difficult for them to manage work-life balance post-pandemic, but they manage it by making a schedule and doing equal distribution of work, and they also stated that the amount of work and stress has increased post-pandemic. Few previous studies had similar results such as Saboowala and Manghirmalani Mishra (2021) who mentioned that in the post-pandemic scenario, when the teachers returned to the schools, female educators expressed that they experienced more workload and stress in teaching as they had to manage home chores and work at the same time. Lizana et al. (2021) said that the COVID and post-COVID timeframes showed substantial gender disparities, with women experiencing a higher influence on their mental and physical health due to work-pressure. There are many female teachers

who are caregivers of their families and are working at the same time, which created a more stressful situation for females during the COVID period and affected their lives. The study conducted by Saboowala and Manghirmalani Mishra (2021) revealed that not just the female teachers, but male teachers as well expressed that they had burnout, stress, and anxiety during the COVID due to workload. Additionally, Korkmaz and Toraman (2020) noted that as teachers resume school post-COVID, some of them are going through a psychological breakdown.

The Teaching Methods Preferred by Elementary School Teachers Post-COVID-19

The third research question explored the most preferred method (face-to-face, online, or blended) of teaching by elementary school teachers in the post-COVID Era. Other than the self-efficacy theory the conceptual framework of my research also includes the TPACK model which can be defined as the educators' knowledge to teach course content by using different technologies and continually improving this process to reinforce previous practices and engage learners in the classroom (Koh et al., 2014). Based on the findings of the study it was revealed that 50% of elementary school teachers reported that they prefer to teach in a blended or hybrid mode of teaching after the pandemic because it provides flexibility and accessibility to various types of teaching pedagogies using different technological resources. While the remaining 50% of participants said that they like to teach in the face-to-face method as it provides better connection, understanding, and communication with the students and they can also use digital games, SMART Board, and audio-visual aids for interactive teaching-learning. The findings of my study are somewhat consistent with the prior studies for instance, Norberg et al. (2011, as cited in Cahapay & Anoba, 2020), stated that blended learning is

coincidentally known as the "new normal" in the realm of educational technology. According to Saha et al. (2022), university teachers recommended mixed methods as the best teaching method after the pandemic, as they faced various challenges while teaching online. Some other researchers revealed that the majority of the teachers indicated that they would like to use a blended learning format over online learning for future educational activities (Amram & Davidovitch, 2021; Atwa et al., 2022; Bordoloi et al., 2021).

The elementary teachers in my research stated that they prefer to teach in a blended mode of teaching because it leverages the benefits of both offline and online modes of teaching, provides flexibility to teach using various tools and technologies, and also helps to enhance communication with parents and students. In addition, it engages students, helps to develop skills, effective use of time, saves time of commuting, and helps to produce new creative content. Further, Xiao (2021) also mentioned that blended learning addresses the challenges posed by pandemic conditions and technological advancements, it facilitates direct engagement between student and teacher, and it still has an educational value that can be utilized as a benchmark for future schooling. Furthermore, most of the educators revealed that they can connect better with their students in the face-to-face method because they can actively engage and participate in classroom activities, while some of them said that they can connect effectively in the blended mode of teaching as they have the autonomy to teach and connect in different spaces. Thus, the findings of the research indicated that elementary school educators have enhanced their teaching techniques in the post-COVID Era by incorporating technology into pedagogical practices (i.e., integration of technology, pedagogy, and content). The

three fundamental domains of teacher knowledge that are technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) are known as TPACK (Lyublinskaya & Kaplon-Schilis, 2022). Joo et al. (2018) noted that the TPACK framework has become an area of specialization for educators in this new normal post-Covid-19 as the teachers strengthened their technological, pedagogical, and content knowledge to continue teaching-learning.

The Technological Enhancement Endured by Elementary School Teachers

The fourth research question examined how elementary school teachers enhanced their knowledge of digital technology in the past two years. Findings related to this question revealed that all of the elementary school teachers attended some form of professional development training to enhance their knowledge and skills of digital technology to continue teaching learning during the COVID and post-COVID period. Findings of the relate to the TPACK framework which expands on Shulman's (1987, 1986) attempt to describe the distinctive professional learning of educators. He described how teachers' knowledge of educational technologies and PCK are interconnected to ensure effective technology-based teaching (Koehler & Mishra, 2009). This finding aligns with Ata et al. (2021) the researcher mentioned that COVID-19 required educators to enhance their skills to incorporate ICT tools into their lessons and develop digital competencies to carry on the teaching-learning process. Further, Pozo-Rico et al. (2020) stated that the teachers underwent the necessary training and workshops and made an effort to improve their skills, knowledge, and resources in accordance with the needs of the kids. This training assisted teachers in acquiring technical skills and resources to promote efficient teaching-learning in the classroom. According to the study conducted

by Amram and Davidovitch (2021) a majority of the teachers stated that they also received and attended professional development training over the previous two years.

Furthermore, in my research findings the elementary teachers mentioned that these trainings, workshops, or short courses were organized by their institution and the government of India. Shagiakhmetova et al. (2022) also mentioned that the school administrators organized online professional development training, courses, and workshops to familiarize teachers with digital tools, enhance their technical knowledge, and promote professional growth. Moreover, in my study teachers also reported that they were provided training to build a solid foundation in computer technology, to develop skills to teach during the pandemic, to gain practical experience, or to improve teaching strategies, and were also provided access to various technological tools. Some of the previous studies presented similar results such as Jayaswal (2019) stated that both teachers and students were being provided with technological tools like computers, laptops, the internet, etc., as there are many initiatives that were been implemented by the government and schools of India to boost the education system with the help of technology. Additionally, Kim (2020), and Choi et al. (2021) noted that knowledge of digital technology helps teachers to gain practical experience.

To conclude, I have addressed the research questions in light of the findings of this study, as well as the relevant literature, focusing on the teaching experiences of elementary school teachers in the post-COVID period. The findings of my research demonstrated that the majority of elementary school teachers had adopted varied teaching style, had a positive views, and attitude towards teaching in the post-pandemic world. As well, gender as a variable does not affect the teaching style of elementary school teachers

in the post-COVID Era. The teachers developed and adopted several new teaching practices to engage the students in their classrooms such as activity-based teaching, inquiry-based instruction, experimental learning, and various other strategies to cultivate creative thinking and gain hands-on experiences. After returning to the classroom most of the teachers increased the use of technology for teaching, lesson planning, assignments, and administrative work, and also increased the use of various digital resources to engage learners in an interactive manner. Furthermore, it was revealed that elementary school teachers prefer to teach in both modes (blended and face-to-face) post-pandemic. Lastly, teachers mentioned that they updated their knowledge and skills by attending professional development programs organized by their school and the government of India.

The results of this study add to the limited knowledge of in-person teaching experiences (in terms of changes in teaching modes, views and attitude of teachers, new teaching strategies, and technological transformation) of elementary school teachers in India in the post-COVID Era. Moreover, this research contributes to the existing knowledge of teachers' real-time experiences of teaching in the classroom post-pandemic in India, and also highlights the new teaching strategies, the use of technology in creative ways, and the challenges faced by them. Lastly, it also highlights teacher preparation for any such future condition as COVID-19.

Chapter 6: Conclusion

To recapitulate, the research explored the in-person teaching experiences of Indian elementary school teachers in the post-COVID Era. Specifically, I explored the difference in the teaching style of elementary school teachers based on their gender, attitudes towards teaching, and pedagogy after COVID. Alongside that, I provided insight into the technological transformation undergone by teachers by conducting an interview, as well as the most preferred and utilized teaching methods (face-to-face, online, and blended mode) by elementary school teachers in India after returning to classroom.

The COVID-19 outbreak caused educational systems to pivot to a virtual learning paradigm in order to limit the disease's spread; these unique circumstances lasted at least a year and altered teachers' perspectives on teaching and learning (El Rizaq & Sarmini, 2021). Educators proactively responded and showed great support for the shifts in lesson delivery by updating their teaching methods, strategies, and technological knowledge (Supena et al., 2020). The existing literature has not thoroughly examined all the factors (views, attitude, teaching approaches, technological enhancements, and preferred modes of teaching) at the same time to gain a complete understanding of the teaching experiences of Indian elementary teachers post-pandemic. In this study, the researcher has covered all the factors and revealed that the majority of elementary teachers have adopted varied teaching style, and have positive views, and attitude towards teaching in the post-COVID Era. Also, gender as a variable does not affect the teaching style of elementary school teachers in the post-pandemic period. Furthermore, the elementary teachers indicated that they had attended numerous professional development workshops that had been conducted by their organization and the Indian government to advance their

technological knowledge and skills following COVID-19. It is clear that the results of the study answered the research questions and provided an understanding of the varied teaching experiences of elementary school teachers in the post-COVID Era.

6.1 Implications and Recommendations

In light of the research findings, there are some implications and recommendations that could be addressed for elementary school teachers. The study advocates empowering teachers and transforming their practices in order to ensure that all children receive quality education. It is recommended that teacher education programs be assessed and modified after the pandemic to prepare the teachers for any such condition. The study's findings have highlighted the multiple ways in which technology can be used in the real-time classroom to teach different pedagogies in the post-pandemic period. Therefore, it is recommended that teachers incorporate technology in their classes in various ways and should also ensure that it is used effectively. Lastly, it is recommended to the policymakers and school administrators that they should assess the difficulties that teachers are facing with teaching in the post-COVID-19.

6.2 Limitations of the Study

There are some limitations in the research study which are, the sample size is relatively small (n = 100), and the present study cannot be regarded as representative of all elementary school teachers in Delhi NCR, India. Therefore, the findings of the study cannot be applied to all elementary school teachers in Delhi NCR. Secondly, other variables such as socioeconomic status, and regional variances may have an impact on the teaching experiences and have not been included in the present study. Also, the survey questionnaire may have evoked anxiety in teacher respondents, and as a result,

they may provide answers that are accommodating, and this might compromise the validity of the findings of the research. Moreover, there were some elementary school teachers who skipped through the open-ended questions while giving the interview, as a result, the external validity is lowered since it is less representative of the general population.

6.3 Future Research

The study explored the varied teaching experiences of Indian elementary school teachers in the post-COVID Era. As in this research, the sample size is not representative of all elementary school teachers in the Delhi region of India. Therefore, the upcoming research must aim to include a significant sample size that represents elementary school teachers from various geographic regions of India. Also, the future researcher could explore the attitude and views of elementary school teachers in detail as separate research, as well as examine the work-life balance of teachers in the post-COVID Era. Furthermore, this research solely focused on the teaching experiences of elementary school teachers; secondary and high school teachers could also be surveyed in the future.

6.4 Concluding Remarks

To sum up, this research helped us gain insight into in-person teaching experiences (in terms of changes in teaching modes, views and attitude of teachers, new teaching strategies, and technological transformation) of elementary school teachers in India in the post-COVID Era. In this research, the majority of the Indian elementary school teachers mentioned that they have introduced several new teaching strategies into practice to engage learners in the classroom post-pandemic. Nevertheless, they mentioned that there is a need to make changes in the curriculum as they have returned to the

classroom after the pandemic, hence they are prepared for any such situation in the future. The majority of the elementary school teachers mentioned that post-pandemic they have increased the use of technology in teaching in numerous ways to engage learners in classroom and to enhance the teaching and learning. Finally, the school administration should take some steps to reduce the workload and stress of elementary teachers as they mentioned that their work and stress increased after returning to the classroom post-pandemic.

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Appendices

Appendix A: Online Survey

Part 1: Demographic Questionnaire

1. What is your age?

    o 20-25

    o 26-30

    o 31-40

    o 40+

2. What is your gender?

    o Male

    o Female

    o   I self-identify as………………………….

3. What is your Marital Status?

    o Single

    o Married

    o Divorced

    o Widowed

4. The name of your school/ Institution?

    ┌─────────────────────────────┐
    │   │
    │   │
    └─────────────────────────────┘

5.   What is the highest academic degree that you have completed?

- o   Bachelor's degree

- o   Master's degree

- o   Doctorate

- o   Others

6.   How long have you been working as a teacher?

- o   1-5 years

- o   6-10 years

- o   11-15 years

- o   16-20 years

- o   More than 20 years

7.   How many years of experience do you have working with ICT?

- o   1-2 years

- o   3-5 years

- o   6-10 years

- o   More than 11 years

8. On average, how many hours do you use the computer for teaching in your classroom per day?

- o   0-2hours

- o   3-5 hours

- o   More than 5 hours

Part 2: Likert Scale Survey Questionnaire

The survey questionnaire consists of two sections- A) Teaching Style of elementary school teachers post-COVID-19 and B) Views and attitude of elementary teachers towards teaching post-COVID-19. Please select the most suitable number (response) for each statement. There are five possible responses to each statement, namely: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD).

A) Teaching Styles of elementary school teachers post-COVID-19	SA 1	A 2	U 3	D 4	SD 5
1. I like experimenting with new techniques when teaching.					
2. The epidemic has altered my teaching strategies, techniques, and methods.					
3. After the pandemic, I upload assignments and notes to a digital platform for students to access.					
4. I use digital resources (instructional software) for teaching after returning to the classroom from a pandemic.					
5. I prefer using digital assessment methods to assess student learning after COVID.					

6. After the pandemic I prefer using digital films, images, presentations, blogs, etc. for engaging students.					
7. I prefer teaching through straight presentations in the new normal classrooms.					
8. I like to include video games and augmented reality apps to engage learners in the new normal.					
9. I like to instruct children in a classroom setting.					
10. I prefer to teach them in an outdoor environment.					
11. I organize activities that include the whole class (demonstration, Overhead projector, Visits, Watching a video/film) in classes post-COVID-19.					
12. I organize individual activities (such as computer-aided learning, Essay writing, Practical, and Individual assignments) in classes post-COVID-19.					
13. I plan small-group activities (small group discussions, Drama, Games) in classes post-COVID-19.					
B) Elementary school teachers' views and attitudes towards teaching					
14. With the advent of online platforms, teaching has become easier since the pandemic.					

15. I use technological tools (computers, laptops, and smartphones) for teaching during COVID-19.					
16. I have gained more knowledge of the incorporation of digital technology in teaching over the last two years.					
17. I feel self-motivated to upgrade my knowledge of technology over the past two years.					
18. In the aftermath of the epidemic, I feel exhausted or become fatigued while teaching.					
19. The use of computers has affected my productivity after the COVID period.					
20. It has positively affected my productivity.					
21. Since COVID-19, I have become used to these screens.					
22. I think technology is overruling the education world after COVID-19.					
23. Teaching is complicated and stressful after the pandemic.					
24. I am enjoying teaching after returning to classrooms post- pandemic.					

Part 3 Interview: Open-Ended Questions

Sample Interview protocol:

Interviewee Name: ………………………………………….

Institution of the Interviewee: …………………………………

Obtain verbal consent of the interviewer: …………………….

Interviewer Name: ………………………………………….

About the Interview: ………………………………………….

Discussion on the topics: …………………………………………

Post Interview comments: …………………………………….

Questions of Interview

1. What new teaching strategies have you adopted after returning to the classroom post-pandemic?

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2. In what ways have you increased the use of technology in the classroom after returning to teaching?

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3. In what ways have educational practices changed in the post-COVID world?

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4. What changes do you feel are needed in the curriculum to continue teaching in the new

normal?

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5. How do you feel about returning to the classroom after a pandemic? Are there any

challenges that you are facing while teaching or in the classroom?

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6. Which mode (face-to-face, online, and blended mode) of teaching do you prefer? Why

do you consider it a good mode to teach?

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7. In which teaching method/ mode do students respond the best? Why?

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8. Which teaching method do you find most effective for connecting with your students? Why?

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9. Which professional development training or program did you attend during the COVID or after the COVID period to enhance your technological skills and knowledge?

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10. How do you manage your work-life balance post-COVID? Has the amount of work and stress increased or decreased?

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11. Has your on-screen time increased since the schools reopened?

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Western

Appendix B: Email for the Principals of the Schools

Invitation to participate in the research study

Respected Principal,

My name is Ankita Rawat, I am an MA student and co-investigator, under the supervision of principal investigator Dr. Isha DeCoito, in Curriculum Studies at the Faculty of Education, Western University. My research study is titled: Teaching experiences of elementary school teachers: An analysis in the post-COVID Era. The study aims to examine the changes in teaching style and strategies, views and attitude toward in-person teaching, modes of teaching preferred, and the technological improvements made by elementary school teachers in the post-COVID world. I am writing to inform you about my study and to ask for your assistance in recruiting potential participants for the study at your school.

Benefits of the study

Participants may not directly benefit from participating in this study, but the information gathered may be beneficial in facilitating the development of new teaching strategies that have emerged after COVID-19 in order to enhance the teaching-learning process. The research will not only provide insight into the current state of online, blended, and offline teaching modes but will also help in developing a policy roadmap for the effective use of these models in the future (COVID and post-COVID scenarios). The study advocates empowering teachers and transforming their practices to ensure that all children receive

an impartial and high-quality education. Additionally, it offers a chance to assess and improve teacher education after a pandemic.

I am contacting you to ask for your help in recruiting potential participants for my study. In my study, I will gather data from around 20 elementary teachers teaching different pedagogies at your schools in the Delhi NCR (National Capital Region) region of India. To be eligible to participate in this study, the following are the criteria for the inclusion of participants in the study:

1) Teachers who are teaching from grades 1st to 8th.

2) Teachers should have some experience in technology-based instruction.

Firstly, the participants (twenty elementary teachers) would be invited to complete an online survey to explore the teaching style of elementary school teachers and their views and attitude towards teaching in the post-COVID world. It is expected that the online survey will take approximately 20 minutes to complete, and the teachers can complete it at their convenience.

Thereafter, I would be inviting the voluntary participants to participate in an optional follow-up interview via Zoom or on the telephone with two of the elementary teachers after obtaining their consent at the end of the online survey. The interview would explore the changes in teaching modes, and technological transformation endured by teachers in the post-COVID world.

Participation in this research study is voluntary. All the information collected in the survey and interview will be used only for research purposes and will remain protected and confidential. Any personal information (such as the name of the school, teachers, or contact details) that could identify you or the teachers will not be used in any publication or presentation of the study results. The participants are free to make their own decision to participate (or not) in the study. If the participants choose not to participate or to leave the study at any time, it will not have any effect on their employment.

The recruitment email, Reminder email, and the letter of information and consent for the survey and the interview will be provided to the participants before conducting the research. These letters have been attached to the email for your reference. Kindly forward the attached study materials (email recruitment script, reminder email recruitment script) to the potential participants to participate in the survey on behalf of the researchers (Dr. Isha DeCoito and Ankita Rawat). Please note that you need to forward the reminder email one week after the first recruitment email.

If you would like any additional information about this study, please feel free to reach out to me at the contact information given below.

Thank you very much for your cooperation.

Thanks & Regards,

Dr. Isha DeCoito

The Faculty of Education

Western University

Or

Ankita Rawat

The Faculty of Education

Western University

Western

Appendix C: Email Script for Recruitment- Teachers

<u>Invitation to participate in the research study</u>

Respected Teachers,

You are invited to take part in a research project that is being conducted by Dr. Isha Decoito and Ankita Rawat. My research study is titled: Teaching experiences of elementary school teachers: An analysis in the post-COVID Era. The study aims to examine the changes in teaching style and strategies, views and attitude toward in-person teaching, modes of teaching preferred, and the technological improvements made by elementary school teachers in the post-COVID world.

As a participant in the study, you will be invited to complete an online survey questionnaire about your teaching style, views, and attitudes toward teaching. The survey will take approximately 20 minutes to complete, and you can complete it at your convenience. If you would like to participate in this study, please click on the link below to access the letter of information and the online survey (https://uwo.eu.qualtrics.com/jfe/form/SV_2i1N8vTLqMcyMrY).

Please note that a reminder email will be sent a week from today.

Participation in this research study is voluntary. All the information collected in the survey and interview will be used only for research purposes and will remain protected

and confidential. Any personal information (such as the name of the school, teachers, or contact details) that could identify you will not be used in any publication or presentation of the study results. You are free to make your own decision to participate (or not) in the study. If you choose not to participate or to leave the study at any time, it will not have any effect on your employment.

If you would like more information about this study, please contact the researcher at the contact information given below.

Thank you very much for your cooperation.

Thanks & Regards,

Dr. Isha DeCoito

The Faculty of Education

Western University

  Or

Ankita Rawat

The Faculty of Education

Western University

Appendix D: Survey Letter of Information and Implied Consent

Study Title

Teaching experiences of elementary school teachers: An analysis in the post-COVID Era.

Document Title

Letter of Information and Consent.

Principal Investigator

Dr. Isha DeCoito, Faculty of Education, Western University.

Additional Research Staff + Contact

Ankita Rawat, Faculty of Education, Western University.

Invitation to participate

The purpose of this letter is to invite you to participate in this research conducted by Dr. Isha Decoito and Ankita Rawat at Western University focusing on assessing the teaching experiences of elementary school teachers in the post-COVID period in the Indian Context. Through this letter, I want to inform you of everything you need to know to make an informed decision about participating in the study. Please read all the information provided below and ask any questions you may have before choosing whether or not to participate.

Background/ Purpose of the study

The purpose of the study is to explore the varied teaching experiences of elementary school teachers in India in the post-COVID Era. The study will examine the changes in teaching style and strategies, views and attitude toward in-person teaching, modes of

teaching preferred, and the technological improvements made by elementary school teachers in the post-COVID world.

The Procedures

Participation in this research study is voluntary. If you decide to participate in this study, you will be invited to complete an online survey with closed-ended questions. Before starting the survey, you will receive an information letter and by responding and submitting the survey, you will indicate your implicit consent to participate in the study. However, even if you begin the survey, you always have the right to withdraw. You can skip any questions other than the one that must be answered, which is the name of your school. The following question cannot be skipped in order to keep track of the number of participants from each school. The survey questionnaire consists of 32 questions, and it is expected that the online survey will take approximately 20 minutes to complete, and you can complete it at your convenience. The data for the survey will be collected anonymously. If you decide to withdraw from the study before submitting your data, you may do so at any time by exiting the survey window. But once your survey responses have been submitted, the researchers will be unable to withdraw your data due to the anonymous nature of your data.

At the end of the survey, you will be invited to share your contact information if you are interested in participating in an optional follow-up interview for the study. Your expression of interest in participating in the interview will not be associated with the survey data, the interviews are an optional additional activity, and more information about the interview will be provided before agreeing to participate in that activity.

Inclusion criteria

In order to participate in this study, participants must be elementary teachers teaching different pedagogies at schools in the Delhi NCR (National Capital Region) region of India.

The following were the criteria for the inclusion of participants in the study:

1) Teachers who are teaching from grades 1st to 8th.

2) The teachers who are teaching in private schools only.

3) Teachers should have some experience in technology-based instruction.

Risks

There are no known or anticipated risks or discomforts associated with participating in this study.

Benefits of the study

Participants may not directly benefit from participating in this study, but the information gathered may be beneficial in facilitating the development of new teaching strategies that have emerged after COVID-19 in order to enhance the teaching-learning process. The research will not only provide insight into the current state of online, blended, and offline teaching modes but will also help in developing a policy roadmap for the effective use of these models in the future (COVID and post-COVID scenarios). The study advocates empowering teachers and transforming their practices to ensure that all children receive an impartial and high-quality education. Additionally, it offers a chance to assess and improve teacher education after a pandemic.

Data Security and Confidentiality

Participation in this research study is voluntary and your decision to participate in this study will be kept confidential. The data collected will be used only for research purposes and will be kept confidential and protected. Any personal information that could identify you will not be used in any publication or presentation of the study results. The name of the school will be collected during the survey, but all the identifiable information is secured and only the PI and the researcher will have access. If the study results are published, the name of your school will not be used in any publication. Representatives of Western University's Non-Medical Research Ethics Board may require access to study-related records to monitor the conduct of the research. The survey responses will be collected anonymously through a secure online survey platform called Qualtrics. The platform records response data, perform analysis, and reports on the data. Qualtrics uses encryption technology and restricted access authorizations to protect all data collected. The data will then be exported from Qualtrics and securely stored on Western University's server and the Qualtrics survey link will be deleted. The study data will be retained by the researcher for a minimum of 7 years as per the research data retention policy in Western University's Faculty Collective Agreement, and all collected data will be destroyed thereafter. The servers of Qualtrics are located in Ireland. The privacy policy information can be obtained via https://www.qualtrics.com/security-statement/.

Compensation

You will not be compensated for your participation in this research.

Rights as a participant

Your participation in this study is voluntary. You may decide not to be in this study. Even if you consent to participate, you have the right to not answer individual questions or to withdraw from the study at any time. If you choose not to participate or to leave the study at any time, it will have no effect on your employment. You do not waive any legal rights by consenting to this study.

Questions about the Study

If you have any questions related to the study, please do not hesitate to contact the principal investigator, Dr. Isha Decoito or the co-investigator Ankita Rawat.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact the Office of Human Research Ethics (519) 661-3036, 1-844-720-9816, or email: ethics@uwo.ca. This office oversees the ethical conduct of research studies and is not part of the study team. Everything that you discuss will be kept confidential.

Publication

The results of the study will be made public via peer-reviewed publications or presentations. In the event the study results are published, no identifiable information will be disclosed.

Consent

Submitting the online survey is an indication of your consent to participate. This consent will be confirmed by checking a consent box before starting the survey questionnaire.

This letter is yours to keep for future reference.

![Western logo]

Appendix E: Reminder Email Script for Recruitment

<u>Invitation to participate in the research study</u>

Respected Teachers,

This email serves as a follow-up to the one you received a week ago and is intended to gently remind you of your potential involvement in our study.

You are invited to take part in a research project that is being conducted by Dr. Isha Decoito and Ankita Rawat. My research study is titled: Teaching experiences of elementary school teachers: An analysis in the post-COVID Era. The study aims to examine the changes in teaching style and strategies, views and attitude toward in-person teaching, modes of teaching preferred, and the technological improvements made by elementary school teachers in the post-COVID world.

As a participant in the study, you will be invited to complete an online survey questionnaire about your teaching style, views, and attitudes toward teaching. The survey will take approximately 20 minutes to complete, and you can complete it at your convenience. If you would like to participate in this study, please click on the link below to access the letter of information and the online survey (https://uwo.eu.qualtrics.com/jfe/form/SV_2i1N8vTLqMcyMrY).

If you would like more information about this study, please contact the researcher at the contact information given below.

Thank you very much for your cooperation. We really appreciate your participation if you have already finished the survey.

Thanks & Regards,

Dr. Isha DeCoito

The Faculty of Education

Western University

   Or

Ankita Rawat

The Faculty of Education

Western University

Western

Appendix F: Invitation to participate in the Interview

Respected Teacher's

Thank you for your valuable time and for successfully completing the first part of the data collection (Part-1 online survey questionnaire) for the research. For the second part of the data collection, I would be conducting an optional follow-up interview either on Zoom or on the telephone depending upon your preference. The interview consists of 11 questions that would explore the changes in teaching modes, and technological transformation endured by teachers in the post-COVID world. These interviews will be conducted according to your time availability, and it would take approximately 20 minutes to complete the interview.

So, if you are interested and comfortable in participating in the interview which would take approximately 20 minutes, then could you please provide me your contact information either by sending an email or by sending a message and will reach you back. Once you have contacted me for the interview then I would provide you with a Letter of Information and Verbal Consent for the interview. Also, during the interview (via telephone or Zoom), I will be recording your verbal consent to participate in the study.

The data collected from you and your personal information will be used only for research purposes and will remain private and confidential. Even if you consent to participate, you

have the right to not answer individual questions or to withdraw from the study at any time. If you do not wish to proceed with the interview, there will be no consequences or effects on your with the survey data, the interviews are an optional additional activity, and more information about the interview will be provided before agreeing to participate in that activity.

If you have any questions, please do not hesitate to contact me at the contact information given below.

Ankita Rawat

The Faculty of Education

Western University

Thank you for considering participation in this study.

Thanks & regards,

Ankita Rawat

Appendix G: Interview Letter of Information and Implied Consent

Study Title

Teaching experiences of elementary school teachers: An analysis in the post-COVID Era.

Document Title

Letter of Information and Consent.

Principal Investigator

Dr. Isha DeCoito, Faculty of Education, Western University.

Additional Research Staff + Contact

Ankita Rawat, Faculty of Education, Western University.

Invitation to participate

The purpose of this letter is to invite you to participate in this research conducted by Dr. Isha Decoito and Ankita Rawat at Western University focusing on assessing the teaching experiences of elementary school teachers in the post-COVID period in the Indian Context. Through this letter, I want to inform you of everything you need to know to make an informed decision about participating in the study. Please read all the information provided below and ask any questions you may have before choosing whether or not to participate.

Background/ Purpose of the study

The purpose of the study is to explore the varied teaching experiences of elementary school teachers in India in the post-COVID Era. The study will examine the changes in

teaching style and strategies, views and attitude toward in-person teaching, modes of teaching preferred, and the technological improvements made by elementary school teachers in the post-COVID world.

The Procedures

Participation in this research study is voluntary. Thank you for completing the online survey and for agreeing to participate and providing your contact information for the voluntary interview. You are invited to participate in an optional follow-up interview which will be conducted individually via Zoom or on the telephone depending upon your choice. These interviews will be conducted according to your time availability. The interview consists of 11 questions and would take approximately 20 minutes to complete. The interview format will be informal, with open-ended questions, and conversational and the audio recording of the interviews will be done after taking your verbal consent at the beginning of the interview. The interviews will be audio-recorded using the voice recording app "Voice Memo" on the phone. If you do not allow a recording of the call, then I will be taking written notes during the interview.

Inclusion criteria

In order to participate in this study, participants must be elementary teachers teaching different pedagogies at schools in the Delhi NCR (National Capital Region) region of India.

The following were the criteria for the inclusion of participants in the study:

1) Teachers who are teaching from grades 1st to 8th.

2) The teachers who are teaching in private schools only.

3) Teachers should have some experience in technology-based instruction.

Risks

There are no known or anticipated risks or discomforts associated with participating in this study.

Benefits of the study

Participants may not directly benefit from participating in this study, but the information gathered may be beneficial in facilitating the development of new teaching strategies that have emerged after COVID-19 in order to enhance the teaching-learning process. The research will not only provide insight into the current state of online, blended, and offline teaching modes but will also help in developing a policy roadmap for the effective use of these models in the future (COVID and post-COVID scenarios). The study advocates empowering teachers and transforming their practices to ensure that all children receive an impartial and high-quality education. Additionally, it offers a chance to assess and improve teacher education after a pandemic.

Data Security and Confidentiality

Participation in this research study is voluntary. The data collected will be used only for research purposes and will be kept confidential and protected. Even if you consent to participate, you have the right to not answer individual questions or to withdraw from the study at any time. Your personal information that could identify you will not be used in any publication or presentation of the study results. On the verbal consent form, your full name and the name of your school will be collected, but all identifiable information is secured, and only the PI and the researcher will have access to it. If the results of the study are published, your name, contact details, or the name of your school will not be disclosed or published. Only a few of your responses to the interview questions will be

used as direct or indirect quotes or they can be paraphrased. A direct quote is the exact words taken from an original source (interview) and used in the second piece of writing (the study) whereas, an indirect quote means taking the idea or fact from your interview and writing it in my own words. Quotes or paraphrased ideas will be used with your consent and your identity will be anonymized by assigning a unique code (S1/T1...).

The Voice Memo a voice recording app will be used for recording the interviews on the phone. Voice Memo app is a default app on an Android device that records sound. The phone being used for data collection is encrypted and password-protected, and the data from the phone will be transferred securely using a USB cord. The servers and services of voice memo are located in Indian, Singaporean, or US servers or any other country in which, their Affiliates or service providers maintain facilities. The privacy policy information can be obtained via https://voicememo.co/privacy-policy.html

Zoom will also be used to conduct and record interviews with the participants. Zoom helps us to connect virtually with participants either by video or audio or both while conducting the interview and it also allows recording of these sessions. The zoom platform is adequate in terms of encrypting data in transit. Western's contract with Zoom prohibits the selling of our community's data to third parties. The privacy policy information can be obtained via https://zoom.us/privacy

I will use NVivo 12 software to analyze interviews. NVivo is a desktop application used for qualitative research analysis. NVivo is software locally installed on the computer; the data will not leave the computer and no data will be identifiable. Canadian customer data is stored in Canada. NVivo doesn't create new significant risks to the computing environment. The third party in NVivo software is QSR International, and you can have

access to the 3rd party's privacy policy information via

https://www.qsrinternational.com/privacy-policy

It is important to remember that a record of participation must remain with the study.

Therefore, the researcher may not be able to destroy your signed letters of information

and verbal consent or your names on the master list. The master list will contain your

name, the name of your school, and the unique code assigned to each participant.

However, any data may be withdrawn upon your request. A list linking your study

number with your name, the name of your school, and contact information will be kept

by the researcher in a secure place, separate from your study file.

Representatives of Western University's Non-Medical Research Ethics Board may

require access to study-related records to monitor the conduct of the research. As per

Western University policy, all the data collected for the study will be destroyed after

seven years.

Compensation

You will not be compensated for your participation in this research.

Rights as a participant

Your participation in this study is voluntary. You may decide not to be in this study. Even

if you consent to participate, you have the right to not answer individual questions or to

withdraw from the study at any time. If you choose not to participate or to leave the study

at any time, it will have no effect on your employment. You do not waive any legal rights

by consenting to this study.

Questions about the Study

If you have any questions related to the study, please do not hesitate to contact the

principal investigator, Dr. Isha Decoito or the co-investigator Ankita Rawat.

If you have any questions about your rights as a research participant or the conduct of this

study, you may contact the Office of Human Research Ethics (519) 661-3036, 1-844-

720-9816, or email: ethics@uwo.ca. This office oversees the ethical conduct of research

studies and is not part of the study team. Everything that you discuss will be kept

confidential.

Publication

The results of the study will be made public via peer-reviewed publications or

presentations. In the event the study results are published, no identifiable information will

be disclosed.

Consent

The verbal consent of the participants will be documented and recorded by the researcher

at the beginning of the interview (via telephone or Zoom). It will be recorded using the

'voice memo app' or by recording the meeting on Zoom.

This letter is yours to keep for future reference.

Western 🛡

<u>**Verbal Consent- Teachers**</u>

Study Title

Teaching experiences of elementary school teachers: An analysis in the post-COVID Era.

Document Title

Letter of Information and Verbal consent.

Principal Investigator

Dr. Isha DeCoito, Faculty of Education, Western University.

Additional Research Staff + Contact

Ankita Rawat, Faculty of Education, Western University.

Did you read the Letter of Information and Verbal Consent?   Yes ☐   No ☐

Do you have any questions about the study at this moment?   Yes ☐   No ☐

Do you agree to participate in the study?   Yes ☐   No ☐

Do you allow audio recording of the interview?   Yes ☐   No ☐

Do you allow to use of direct and indirect quotes from your interview in publications?
Yes ☐   No ☐

Do you permit paraphrasing your ideas from the interview?   Yes ☐   No ☐

Name of participant: ………………………………………………………….

Name of the School/ Institution………………………………………………….

Date of participant verbal consent: ……………………………………………

Name of Person Obtaining Consent: …………………………………….

Signature of the person obtaining consent:

…………………………………….

Date: …………………………...

Questions of the Interview

1. What new teaching strategies have you adopted after returning to the classroom post-pandemic?

2. In what ways have you increased the use of technology in the classroom after returning to teaching?

3. In what ways have educational practices changed in the post-COVID world?

4. What changes do you feel are needed in the curriculum to continue teaching in the new normal?

5. How do you feel about returning to the classroom after a pandemic? Are there any challenges that you are facing while teaching or in the classroom?

6. Which mode (face-to-face, online, and blended mode) of teaching do you prefer? Why do you consider it a good mode to teach?

7. In which teaching method/ mode do students respond the best? Why?

8. Which teaching method do you find most effective for connecting with your students? Why?

9. Which professional development training or program did you attend during the COVID or after the COVID period to enhance your technological skills and knowledge?

10. How do you manage your work-life balance post-COVID? Has the amount of work

and stress increased or decreased?

11. Has your on-screen time increased since the schools reopened?

Ethical Approval

Date: 11 January 2023

To: Dr. Isha DeCoito

Project ID: 121682

Study Title: Teaching Experiences of Elementary School Teachers: An Analysis in the Post- COVID Era

Short Title: Teaching Experiences of Elementary School Teachers in the Post- COVID Era

Application Type: NMREB Initial Application

Review Type: Delegated

Full Board Reporting Date: 03/Fec/2023

Date Approval Issued: 11/Jan/2023 09:47

REB Approval Expiry Date: 11/Jan/2024

_____

Dear Dr. Isha DeCoito

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. **All other required institutional approvals and mandated training must also be obtained prior to the conduct of the study.**

Documents Approved:

Document Name	Document Type	Document Date	Document Version
Interview	Interview Guide	11/Nov/2022	01
Online Survey	Online Survey	12/Dec/2022	02
Invitation_For_Interview	Recruitment Materials	10/Jan/2023	02
Email_For_Principal_To_Recruit_Participants	Recruitment Materials	10/Jan/2023	02
Survey_Letter_Of_Information_And_Consent_For_Teachers	Implied Consent/Assent	10/Jan/2023	03
Interview_Letter_Of_Information_And_Consent_For_Teachers	Verbal Consent/Assent	10/Jan/2023	03
Emai_For_Recruitment_Of_Participants	Recruitment Materials	10/Jan/2023	03
Reminder_Email_For_Recruitment_Of_Teachers	Recruitment Materials	10/Jan/2023	03

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Ms. Katelyn Harris , Research Ethics Officer on behalf of Dr. Randal Graham, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Curriculum Vitae

Name: Ankita Rawat

Full- time: Yes

ACADEMIC BACKGROUND

2017 – 2019	**Master of Arts, (Education)**
	Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow (India)
	(Gold Medalist)
	Thesis
	A Study of the attitude of the B.Ed. pupil-teacher towards the use of cyber resources; Supervisor: Prof. Lalima Tripathi
2015 – 2017	**Bachelor of Education (B.Ed.)**
	Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow (India)
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PUBLICATIONS

Research Paper (Published):

- Attitude of the B.Ed. Pupil-Teacher and Use of Cyber Resources: ISSN:2348-4349 Volume -7, KIJAHS 2020/V-7/ISS-1/A5 (Feb 2020)